E-MU

Xboard61

Xboard49

Xboard25

Owner's Manual

Xboard25 Xboard49 Xboard61

Owner's Manual

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INTRODUCTION

Congratulations on your purchase of the E-MU Xboard 25, Xboard 49, or Xboard 61 USB/MIDI controller. Xboard professional USB/MIDI controllers offer unmatched playability, real-time control and programmability in portable 25 key, 49 key, and 61 key packages. All models feature full-size velocity-sensitive keys with aftertouch, pitch and modulation wheels, and 16 controller knobs. The Xboard 61 additionally features 16 Patch Select/Program Change buttons, and four Zone enable/disable buttons.

These keyboards are ideal for either studio or stage use since they can be used as stand-alone MIDI controllers or with a USB equipped PC or Macintosh computer. The Xboard MIDI output can even be used as a MIDI interface for your computer when connected via USB. The Xboard is ultra-portable and can be powered via USB, battery, or using the optional 6 VDC power supply.

Each of the 16 controller knobs can be programmed to any controller number on any MIDI channel. The keyboard can be transposed up or down ±4 octaves in order to play in any key and any pitch.

You can also assign four different Keyboard Zones to four different MIDI channels, each using a different key range and velocity range. Also, each Zone can have different settings for Pitch Wheel, Mod Wheel, Latch, Aftertouch, Pedal, and Transpose.

All Xboard models contain a host of extra features. The "Snap Shot" feature lets you send multiple controller values with a single button press. The "Xboard Latch Mode" lets you define a section of the keyboard as On/Off triggers—perfect for drum loops. Each of the 16 internal patches has a programmable footpedal/footswitch setting, can select one of eight velocity curves, and can send program changes for up to 16 MIDI channels.

Requirements

The included Xboard Control software provides an intuitive desktop interface that makes it easy to create custom templates for all your favorite hardware and software instruments.

On a PC:

You must be running Windows 2000, XP, or XP x64 Edition, and your computer must support USB to communicate with the Xboard. The Xboard can operate in MIDI Output mode without a computer if power is supplied via a 6VDC adapter or batteries.

On a Mac:

You must be running Mac OS X 10.3.9 or later to connect the Xboard. The Xboard can operate in MIDI Output mode without a computer if power is supplied via a 6VDC adapter or batteries.

Hardware Installation

The connection diagrams on the following pages show how to connect the Xboard to your computer or to another MIDI device.

The supplied USB cable provides power and a two-way data link between the Xboard and your computer. The USB port on your computer is a small (1/8″ x 3/8″) rectangular opening. The connector is keyed so you cannot plug it in wrong. The other end of the USB cable is square and plugs into the back of the Xboard. This end is also keyed to prevent incorrect insertion.

Important: Windows 2000 users must install the software BEFORE the hardware is connected for the first time.

If the Xboard is not connected to the computer via USB it requires a source of power in the form of a 6VDC adapter (tip positive) or (3) AA batteries.

Connecting the Xboard to your Computer

USB Connection

USB provides a two-way data link between the Xboard and your computer and also supplies power to the Xboard. Always connect to the USB port on the computer itself—the USB port on your computer keyboard will not supply sufficient power.

USB Cable
(included)

MIDI Connection

The Xboard sends MIDI performance data to another MIDI device, such as a MIDI sound module. The Xboard always transmits MIDI data except when "Thru" mode is enabled. (See page 39.)

MIDI Sound Module

In
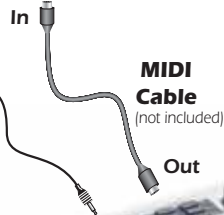
MIDI Cable
(not included)

6 VDC Adapter
(optional)

Out
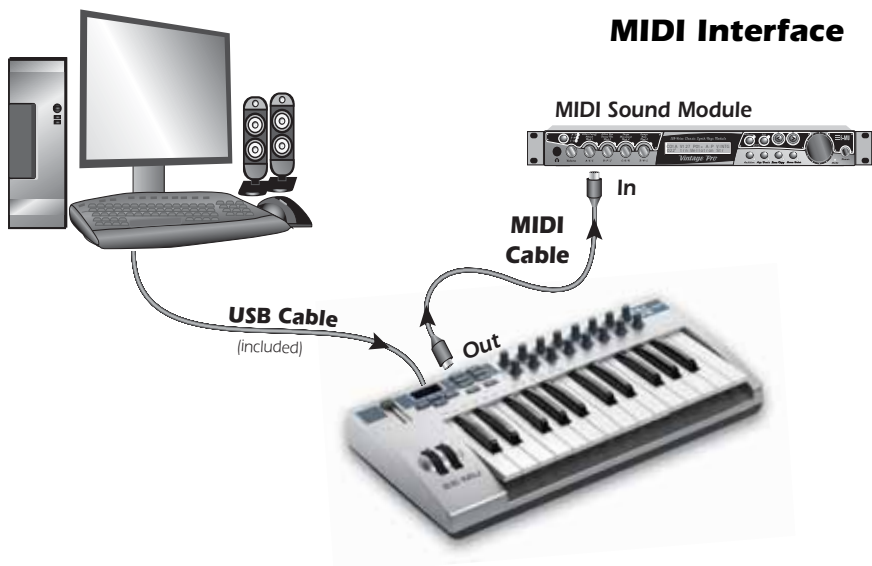
MIDI Interface

MIDI Sound Module

In

MIDI Cable

USB Cable
(included)

Out

The Xboard can function as a MIDI interface when connected to your computer via USB. Set the Xboard MIDI port to "Thru" () to transmit MIDI from your sequencing application to an external MIDI device.

Software Installation

Macintosh OS X

Follow these instructions to install the Xboard Control software on a Macintosh computer.

1. Insert the Xboard installation CD.

2. Double-click the E-MU icon on your desktop.

3. In the E-MU folder that opens, double-click the **E-MU Xboard Apps & Docs** installer.

4. Follow the prompts to install the software.

Windows 2000

Follow these instructions to install the Xboard USB drivers and Xboard Control software on a Windows 2000 computer.

1. Make sure the X-Board is NOT CONNECTED to your computer.

2. Insert the E-MU software Installation CD into your CD-ROM drive. If Windows AutoPlay mode is enabled for your CD-ROM drive, the CD starts running automatically. If not, from your Windows desktop, click **Start ➜ Run** and type **d:\setup.exe** (replace **d:** with the drive letter of your CD-ROM drive). You can also simply open the CD and double-click **Setup.exe**.

3. The installation splash screen appears. Follow the instructions on the screen to complete the installation. You will have the option to install E-MU Xboard, and the other software included on the CD.

4. Choose "Continue Anyway" when you encounter the "Windows Logo Testing" warning screen. See the note on the following page.

5. When prompted, restart your computer.

6. Connect the Xboard to your computer using the supplied USB cable.

Windows XP

Follow these instructions to install the Xboard USB drivers and Xboard Control software on a Windows XP computer.

1. Connect the Xboard to your computer using the supplied USB cable, and turn it on.

2. If Windows prompts you with an Add New Hardware Wizard, click **Cancel**.

3. Insert the E-MU software Installation CD into your CD-ROM drive. If Windows AutoPlay is enabled for your CD-ROM drive, the CD starts running automatically. If not, click the **Start** menu, and select **Run**. Type `d:\setup.exe` (where `d:` is the drive letter of your CD-ROM drive) and click **OK**. You can also explore the CD and double-click **Setup.exe**.

4. The installation splash screen appears. Follow the instructions on the screen to complete the installation. You will have the option to install E-Mu Xboard, and the other software included on the CD.

5. Click **Continue Anyway** when you encounter the "Windows Logo Testing" warning screen. See "Note About Windows Logo Testing".

6. When prompted, restart your computer.

Uninstalling all Audio Drivers and Applications

At times you may need to uninstall or reinstall some or all of the Xboard's applications and device drivers to correct problems, change configurations, or upgrade outdated drivers or applications. Before you begin, close all Xboard-related applications. Applications running during the uninstallation will not be removed.

1. Click **Start ➜ Settings ➜ Control Panel**.

2. Double-click the **Add/Remove Programs** icon.

3. Click the **Install/Uninstall** tab (or **Change or Remove Programs** button).

4. Select the **E-MU Xboard** entry and then click the **Change/Remove** button.

5. In the **InstallShield Wizard** dialog box, select the **Remove ALL** option.

6. Click the **Yes**.

7. Restart your computer when prompted.

8. You may now re-install existing or updated E-MU device drivers or applications.

Note About Windows Logo Testing

When you install the Xboard USB drivers, you see a dialog box that informs you that the driver has not passed Windows Logo testing.

However, the Xboard USB drivers have been rigorously tested using the same test procedures that a signed driver requires, and it passes in all important categories, including those that measure the relative stability of the driver. So, it is perfectly safe to install these drivers on your computer.

Troubleshooting

Lost Communication

Should you lose MIDI communication between your Xboard and an audio appli-
cation (Cubase, Sonar, etc.) or the Xboard Control software, the Xboard drivers
may need to be re-selected in your application.

1. Go to your application's MIDI I/O settings, de-select the Xboard for both
   MIDI input and output (or select a different MIDI device).

2. Apply these changes and exit the dialog.

3. Re-enter the application's MIDI settings and re-select the Xboard drivers. If
   this does not work, the application may need to be restarted.

Wrong Driver in Windows XP or Windows 2000

You may encounter a situation where the Xboard Control or Proteus X software is
not running properly, even though the MIDI device itself seems to be working fine.

If this is the case, you may be in a situation where the Microsoft USB Audio Device
driver is running, rather than the E-MU USB Xboard Driver. This may happen if
you add a USB Hub, or if you plug the Xboard keyboard into a different USB port
than the one it was plugged into when you installed the Xboard software.

▶ To confirm the problem, do the following:

1. Temporarily disconnect any USB audio devices you may have connected (USB
   audio/USB MIDI interfaces, etc.).

2. Connect the Xboard to a USB port and switch the power to the on position.

3. Windows may prompt the user with an Add New Hardware Wizard--Cancel
   this wizard.

4. Start menu ➜ Settings ➜ Control Panel ➜ System ➜ Hardware ➜ Device
   Manager.

5. Under Sound, Video and Game Controllers, find the device called either **USB
   Audio Device** or **E-MU Xboardxx**.

6. Double-click on this device and then click on **Driver.**

7. If the vendor shown here is E-MU Systems, you have run into a different-
   problem, and you should contact Technical Support.

   If the vendor shown here is Microsoft, instead of E-MU Systems, you have
   indeed run into this situation. Continue on to the next section.

▶ ***Windows XP → You may recover by doing the following:***

1. Click on **Update Driver**.

2. If you are running Windows Service Pack 2, following dialog box appears. Select **No, not this time**, and click **Next**.
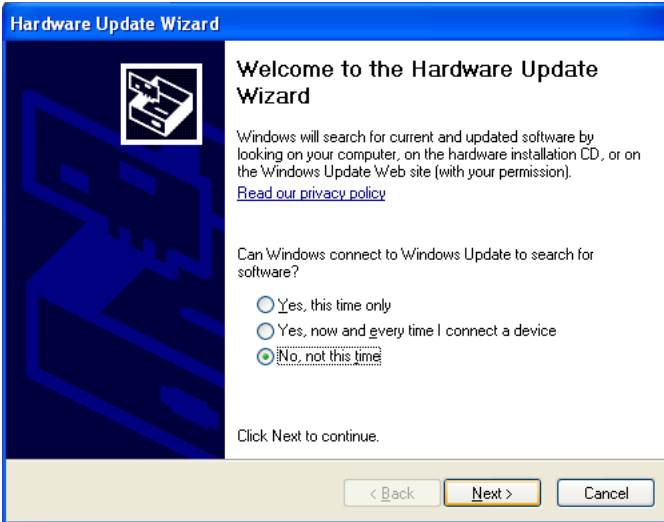
3. Select **Install from a specific location (Advanced)**, and click **Next**.
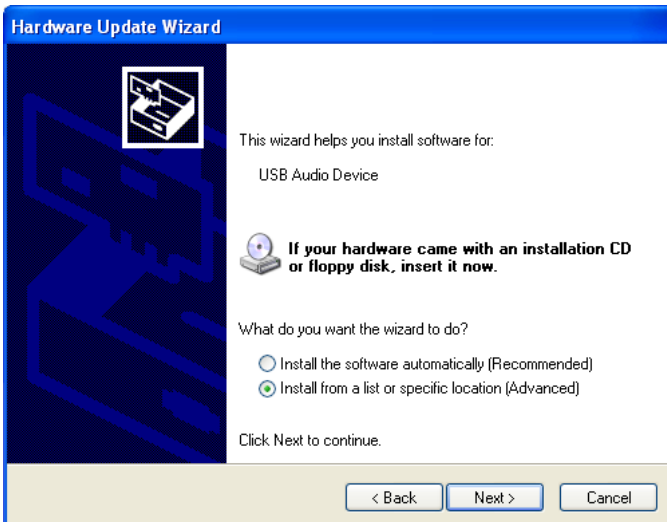
4. Select **Don't Search, I will choose the driver to install**, and click **Next**.
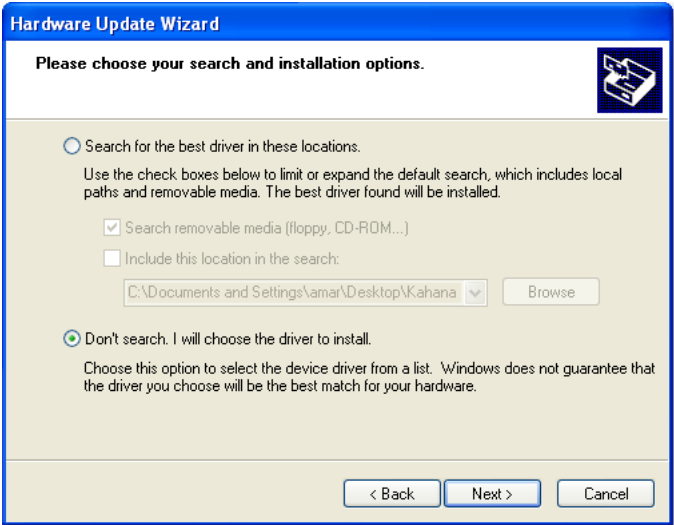
5. Select **E-MU USB-MIDI Device**, and click **Next**.
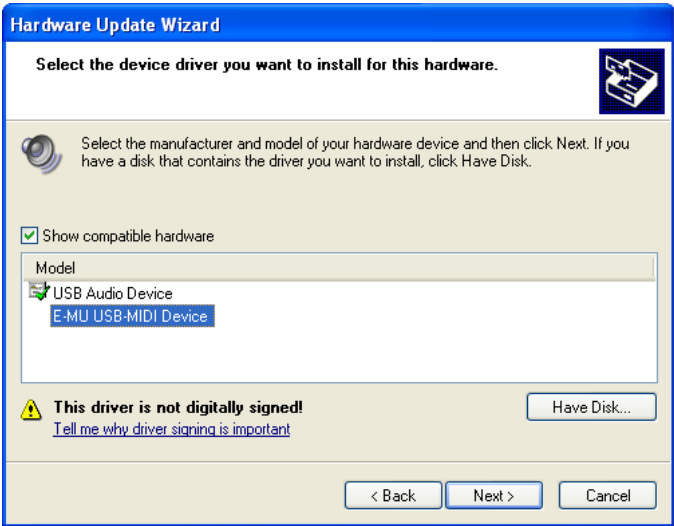
6. After a few moments, you will see the Microsoft Digital Signature warning. Click **Continue Anyway**.

7. You should now be using the correct driver. It may be necessary to reboot your computer at this point.

▶ *Windows 2000 → You may recover by doing the following:*

1. Double-click the incorrect listing in the Device Manager and choose **Update Driver...** from the Driver tab.

2. Click **Next**, then Display a list of known drivers for this device...

3. Click **Next**.

4. Click **Have Disk...**

5. Insert your Xboard install CD. If the disk autoruns, Exit the disk's installer.

6. Click **Browse**.

7. Browse to the following file, double-click the file, and click **OK**:
   X:\Audio\Drivers\Driver\emuumidi.inf (where *X* is your CD drive letter).

8. Click **Next**.

9. Click **Next** again. The Windows logo testing dialog should appear.

10. Click **Yes**.

11. Click **Finish**. It may be necessary to reboot your computer at this point.

MAIN PANEL CONTROLS
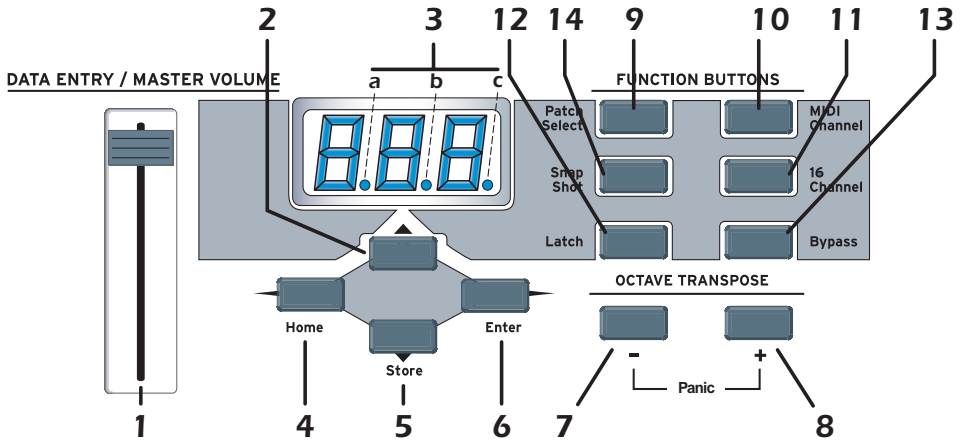
1. Data Entry / Master Volume Slider

This control is used to enter data values when editing. When not being used for editing, the Data Slider functions as a master volume control transmitting a "Universal Real Time System Exclusive" message for Master Volume.

2. Edit

Press this button to edit the current patch and certain device settings.

To Edit: Press the Edit button, choose the parameter to be edited using the keyboard keys, enter the value with the slider, then press Enter.

3. MIDI Indicators

The decimal points in the LED flash to indicate USB and MIDI activity.
a. USB In
b. USB Out
c. MIDI Out

The activity indicators can be enabled or disabled from the X1 menu.

4. Home

The Home button takes you out of edit mode and back into play mode **without saving** your edit. You can also think of this button as an **Escape** button which returns you to Play mode, the normal operating mode of the keyboard. The Home LED is lit whenever the Xboard is in Play mode.

5. **Store Patch**

This button stores your keyboard setup in one of the 16 memory locations.

To Store a Patch: After pressing Store, select the desired patch number using the **data slider**, the **Octave Transpose** + and - buttons, or the **Direct Patch Select** buttons (Xboard 61 only), then press **Enter** to store the current setup.

6. **Enter**

Press Enter to confirm your settings when editing. In most cases, the Home LED illuminates after Enter is pressed, indicating a return to Play mode.

7. **Octave Down**

This button transposes the keyboard down one octave each time it is pressed. The new octave transpose value (-1, -2, -3, -4) momentarily appears in the display and the LED on the button remains lit unless transpose is set to zero.

8. **Octave Up**

This button transposes the keyboard up one octave each time it is pressed. The new octave transpose value (+1, +2, +3, +4) momentarily appears in the display and the LED on the button remains lit unless transpose is set to zero.

MIDI Panic Button (7 + 8)

Pressing both of the Octave Transpose buttons simultaneously causes the following MIDI messages to be sent on all 16 channels: "All Notes Off", "All Sounds Off", "Sustain Pedal Off". This will turn off any "stuck notes" which occur when a synthesizer receives a note-on message without receiving a corresponding note-off message.

Increment / Decrement Buttons

The Octave Transpose buttons can be used as increment/decrement buttons whenever the Data Slider is active for modifying an edit value (either numeric or non-numeric settings). The increment/decrement buttons allow you to increase or decrease the value one unit at a time.

9. **Patch Select**

This button is used to select one of the 16 user patches in memory.

To Select a Patch: Press the Patch Select button, then choose a patch using the **data slider**, the **Octave Transpose** + and - buttons, or the **Direct Patch Select** buttons (Xboard 61 only), and press **Enter**.

10. **MIDI Channel Select**

This button selects the Basic MIDI channel for the keyboard and all controls.

To Select a MIDI Channel: Press the MIDI Channel button, then select the channel using the **data slider**, the **Octave Transpose** + and - buttons, or the **Direct Patch Select buttons** (Xboard 61 only), and press **Enter**.

11. **16 Channel Control Mode**

In this mode, one MIDI Continuous Controller number is assigned to all 16 knobs and each numbered knob transmits on the same-numbered MIDI channel. This gives you control of one parameter (such as volume or pan) for all 16 MIDI channels. See page 27 for detailed information.

12. **Latch Mode**

In this mode, pressed keys continue to play until they are pressed again to turn them off. This allows notes to be sustained for any length of time without having to hold down the keys. A range of latch keys can be defined using the "Latch High Note" and "Latch Low Note" edit parameters. See page 29.

13. **Knob Bypass**

Knob Bypass disables the transmission of MIDI messages from the knobs or control pedal/footswitch to avoid abrupt parameter jumps in performance.

When Bypass is On, you can pre-set the knobs anywhere you like without sending MIDI controller messages. When you turn Bypass Off again, nothing is transmitted, but the knobs are now in the desired position for your performance. When you turn a knob, the value of the new knob position will be sent.

This feature can also be used to set up any of the knobs the way you want, then send the values later using the Snapshot feature. See page 31.

14. **Snapshot**

When this button is pressed, the stored current settings of all performance controls (knobs, wheels, footswitch/pedal) are transmitted. This feature can also be used in conjunction with the Knob Bypass control to setup, and then send a group of MIDI continuous controllers messages at once.

The Snapshot function is accessible only while in Play mode (i.e., whenever the Home LED is lit).

CONTROLLER KNOBS
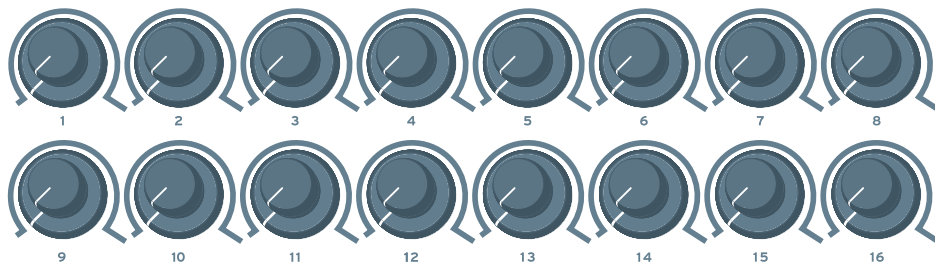
The 16 Controller Knobs are designed to modify the sound during performance. MIDI Continuous Controller messages are transmitted whenever the knobs are turned (except when "Knob Bypass" is enabled).

Whenever a controller knob is turned, the current value of the knob is displayed on the LED. Next, the letters "CC" flash on the display, followed by the MIDI Continuous Controller assigned to the knob, then the letters "CH", and finally the MIDI channel on which the knob currently sends. To set the CC channel numbers of the knobs see .

Normal mode

Any MIDI Continuous Controller number can be assigned to any knob. For instructions on setting this from the Xboard, see . For help setting this using the Xboard Control Software, see .

16 Channel Controller mode

In this mode, one MIDI Continuous Controller number is assigned to all 16 knobs and each numbered knob transmits on the same-numbered MIDI channel. This gives you control of one parameter (such as volume or pan) for all 16 MIDI channels. See .

3D MIDI and NRPN mode

Using the Xboard Control software, any of the 16 Controller Knobs can be configured to run in 3D MIDI mode, or NRPN mode. For more information, see .

XBOARD 61 PANEL CONTROLS
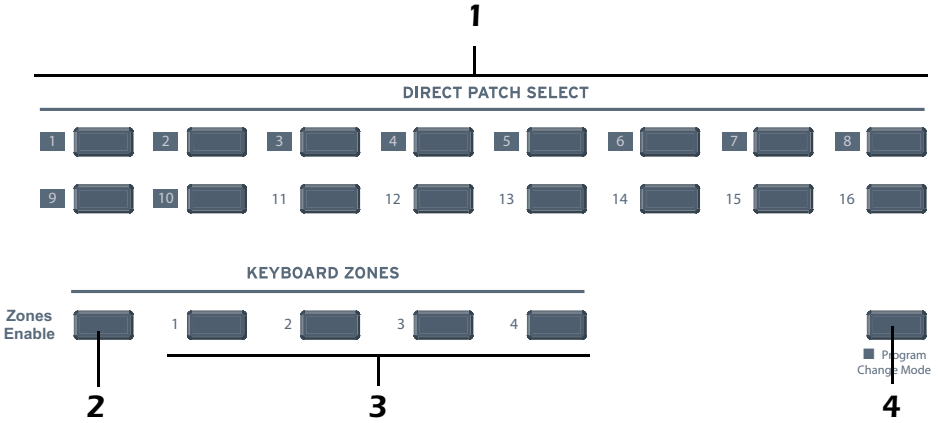
1. Patch Select / Numeric Keypad

These buttons serve a number of functions:

- With Program Change mode turned off, you can select a patch from 1 to 16 at any time. The LED for the current patch stays illuminated.
- When changing MIDI channel, or Storing and Loading Patches with the main panel controls, use buttons 1 through 16 to make a selection.
- For Program change mode, use buttons 1 through 10 to enter numerical values for Program Changes.
- Use the numerical keypad buttons when entering numerical values, such as Edit functions.

2. Zones Enable

Enables or disables Zones functions in the active patch. When Zones are enabled, the LED illuminates.

For the Xboard 25 or Xboard 49, you can enable or disable Zones using the X2 menu item "ZoE" (page 43) or the Xboard Control software (page 56).

3. Keyboard Zones Buttons

These buttons enable or disable individual Zones. When a Zone is enabled, the LED illuminates.

For the Xboard 25 or Xboard 49, you can enable or disable individual Zones using the Xboard Control software (See page 58).

4. Program Change Mode

When you press this button, you switch between Program Change mode and Patch Select mode. The LED illuminates when in Program Change mode.

- **Program Change mode:** allows you to send MIDI program changes to other equipment using the numerical buttons. (0-9)
- **Patch Select mode:** allows you to select from 16 internal patches (1-16).

The Program Change Mode button also doubles as the **Enter** button when it, along with the **Enter** button, flashes.

Using the Numeric Keypad

The numeric keypad allows you to enter numeric values for Program Changes, and other settings.

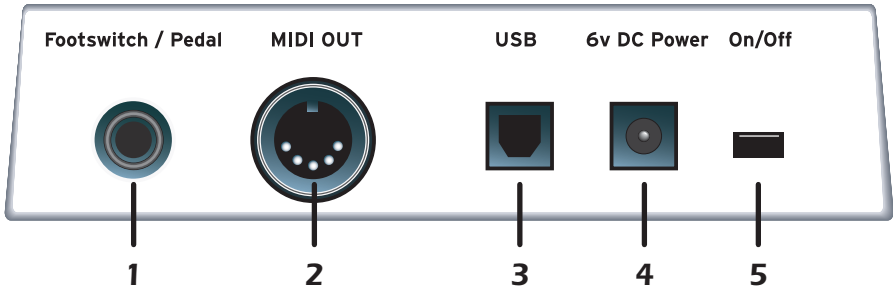### Use 1-10 to Enter Numerical Values

To use the numeric keypad to enter data, use the buttons labeled 1 through 10 to enter a value. The current value is reflected in the display. The "10" button acts as the value of 0, so if you want to enter a value of 109, you would press:

If you enter a value you don't like, you can clear the value by entering "0" three times.

BACK PANEL DESCRIPTION

1. **Footswitch / Footpedal Input**

    This jack accepts either a footswitch or continuously variable footpedal. The default setting is for a footswitch. To use a footpedal, see page 40.

    Footswitch - Accepts either a normally-open or normally-closed momentary footswitch. The Xboard auto-senses the polarity on power-up.

    Footpedal - Accepts most standard footpedal types with a stereo plug. See the wiring diagram shown on page 65 for pedal wiring specifications.

2. **MIDI Output**

    Outputs note and controller MIDI data from the Xboard. This jack can also be used as a MIDI interface from a computer software application. See page 39. Use a standard MIDI cable to connect the Xboard to the MIDI input jack of other MIDI devices.

3. **USB**

    Connects Xboard to your computer via the supplied USB cable. The USB connection provides two-way communication when connected to the computer and also supplies power to the Xboard. **Always connect to the USB jack on the computer itself** and NOT to a low-power USB connection that may be present on your computer keyboard or other USB peripheral.

4. **6 Volt DC Power**

    This jack allows the Xboard to be powered from a standard 6VDC Adapter (positive tip) when not connected to the computer via USB.

5. **On/Off Switch**

    This switch turns the Xboard on or off whether powered via USB, AC Adapter, or batteries.

POWERING THE XBOARD

The Xboard can be powered using any of the following power sources:

- USB from the host computer
- 6 VDC Adapter *(Optional - Part Number: 70EM779006000)*
- (3) AA batteries

The priority of power sources is as follows:

1. 6VDC power - will be used over all other power sources if available.

2. USB power - will be used if connected and 6VDC is not available.

3. Battery power - will be used only if no other power source is available.

Inserting Batteries into the Xboard

Sometimes it's nice not to have to hassle with power at all. Thankfully the Xboard can be operated using (3) AA batteries. Battery life generally exceeds 5 hours using standard alkaline batteries. Lithium batteries typically last 16+ hours.

▶ **To Insert Batteries:**

The battery compartment is located on the bottom of the unit.

1. Press the two tabs toward the middle of the battery door while lifting up. The compartment door lifts up and out.

2. Insert (3) AA batteries. Make sure you install them as indicated at the bottom of the battery compartment with + aligned with the + side of the battery.

The battery compartment on the Xboard 25 and Xboard 49

3. Insert the tabs of the battery compartment door into the hinge slots, then press down to snap the door closed.

BASIC OPERATIONS

Entering Data

There are several ways to enter data from the Xboard.

- **Data Slider** - Move the slider to select the data value.
- **Octave Transpose buttons** - Increment and decrement by pressing the "+" and "-" buttons.
- **Keyboard Data Entry** - The black and white keyboard keys marked with numbers can be used to directly enter data values *(except when changing the MIDI channel number or storing and selecting patches, since the keyboard remains "live" at these times)*.
- **Numeric Keypad (Xboard 61 only)** - Type in the value using keys 1-10. See .

Selecting and Storing Patches

The Xboard can hold 16 patches in its internal memory. A patch contains the settings for all user programmable controls of the Xboard.

In addition, depending on the patch settings, the Xboard can send MIDI program changes message(s) and initial controller settings for the knobs, wheels and footswitch/pedal when a particular patch is selected.

▶ **To Select a Patch Using the Main Panel:**

1. Press the **Patch Select** button, illuminating the LED. The **Enter** button and **Program Change Mode** button (Xboard 61) begin flashing.

2. Select the desired patch number using the **Data Slider** or the **Octave Transpose** + and - buttons. On the Xboard 61, you can also use the **Direct Patch Select** buttons 1 through 16.

   On the Xboard 61, the new patch you selected begins flashing.

3. Press **Enter** to confirm the operation. Press **Home** to cancel the operation.
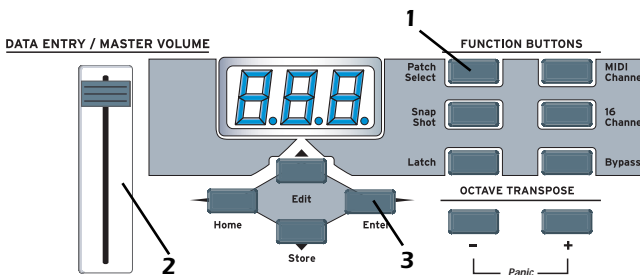
▶ **To Select a Patch Using Direct Patch Select Buttons (Xboard 61):**

1. Make sure Program Change mode is off. The **Program Change Mode** button's LED should not be lit.

2. Press one of the **Direct Patch Select** buttons 1 through 16.

▶ **To Store a Patch:**

1. Press the **Store** button. The **Enter** and **Direct Patch Select** (Xboard 61) LEDs begin flashing.

2. Select the desired patch number using the **Data Slider** or the **Octave Transpose** + and - buttons. On the Xboard 61, you can also use the **Direct Patch Select** buttons 1 through 16.

    On the Xboard 61, the new patch you selected begins flashing.

3. Press **Enter** to store the patch. Press **Home** to cancel the operation.
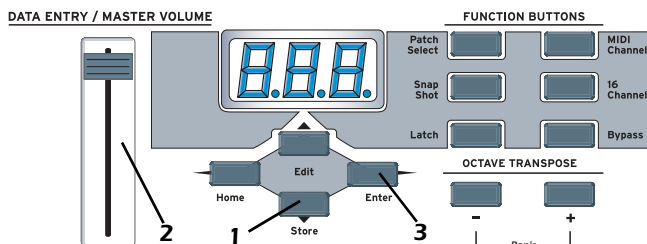
Changing the MIDI Channel

The MIDI specification allows for up to 16 channels to be used. This control allows you to set the **Basic MIDI channel** for data transmitted by the Xboard keyboard and controllers. Note that this setting is stored in and recalled from patches.

▶ **To Change the MIDI Channel:**

1. Press the **MIDI Channel** button. The MIDI Channel LED illuminates. On the Xboard 61, the Direct Patch Select button representing the Current MIDI channel also illuminates.

2. Select the desired MIDI channel using the **Data Slider** or the **Octave Transpose** + and - buttons. On the Xboard 61, you can also use the **Direct Patch Select** buttons 1 through 16.

    The **Enter** and **Direct Patch** Select (Xboard 61) buttons will be flashing. On the Xboard 61, the Direct Patch Select button representing the new MIDI channel begins flashing as well.

3. Press **Enter** to confirm the operation, or press **Home** to cancel the operation.

Transposing the Keyboard

OCTAVE TRANSPOSE

−   +

The keyboard can be transposed up and down ±4 octaves by pressing the **Octave Transpose** buttons. The octave number appears momentarily in the display. The LED on the transpose button remains lit to remind you that the keyboard is transposed. The transposition value is stored with the patch.

Octave Transpose works differently depending on your zones settings:

- With Zones disabled, the keyboard is simply transposed by octaves.
- With Zones enabled and **Octave Transpose Mode** set to **Pre Zone** (page 56), the keyboard is transposed, but each Zone's tuning stays the same.
- With Zones enabled and **Octave Transpose Mode** set to **Post Zone** (page 56), any Zone that has **Post Zone Octave Transpose** enabled (page 59) is transposed, while the keyboard's tuning stays the same.

# Changing Controller CC Channel Numbers

You can change MIDI continuous controller numbers (0-127) for each knob, pedal, or the Mod Wheel on the Xboard. The Xboard CC numbers must match the CC numbers on your synthesizer in order to operate.

▶ **To Change Controller CC Channel Numbers:**

1. Press the **Edit** button.

2. Move the controller you want to change. This can be any of the 16 controller knobs, a pedal, or the Mod Wheel. The **Enter** button blinks and the display shows you the controller's current CC Channel number.

3. Select the desired CC Channel number using the **Data Slider** or the **Octave Transpose** + and - buttons. On the Xboard 61, you can also use the **Direct Patch Select** buttons 1 through 16.

4. Press **Enter** to confirm the operation. Or, press **Home** to cancel the operation.

16 Channel Control Mode

16 Channel Control mode is a special performance mode in which all 16 knobs send one CC number on MIDI channels 1 through 16. This allows you to control a single parameter on all 16 MIDI channels. For example, if the controller number were set to #7 (Channel Volume), the knobs could be used to mix the volumes of all 16 MIDI channels.
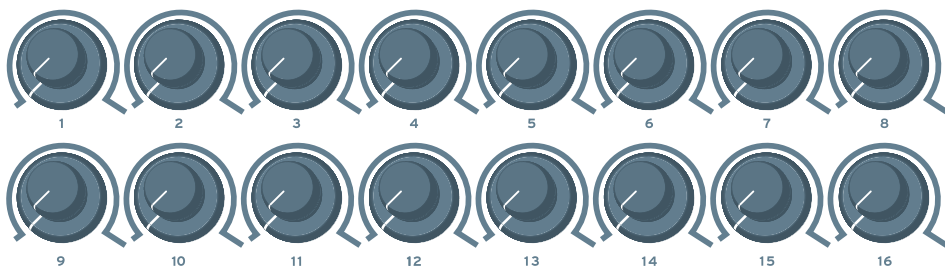
In 16 Channel Control Mode, each knob transmits on its same-numbered MIDI Channel. All knobs transmit the same MIDI Controller Number.

▶ **To Select 16 Channel Control Mode:**

1. Press the **16 Channel** button. The **16 Channel** LED illuminates.

2. Press the button again to exit 16 Channel Control Mode. The LED goes off.

▶ **To Set the 16 Channel Control Number:**

1. Press the **Edit button**. The **Edit** LED illuminates.

2. Press the keyboard key marked **16-Ch. CC Number**.

3. Select a CC number from 0-127 using the **Data Slider**, the **Octave Transpose** buttons, or the **Numeric Keyboard** keys. The **Enter** button flashes.

4. Press **Enter** to confirm the operation. Press **Home** to cancel the operation.

Working With Zones

▶ **To Enable or Disable the Zones Function:**

- Use the **ZoE** function in the X2 menu. See .
- For the Xboard 25, 49, or 61, use the **Zones Enable** button in the Xboard Control software. See .
- On the Xboard 61, press the **Zones Enable** button. When enabled, the LED illuminates.

Note: Semitone Transpose is disabled when Zones are enabled.

▶ **To Enable or Disable a Specific Zone:**

- On the Xboard 61, press the corresponding button for Zone 1, 2, 3, or 4. When a zone is enabled, its LED illuminates.
- For the Xboard 25, 49, or 61, Enable Zones in the Xboard Control software. See .

Note Latch Mode

This is a performance mode in which a selected range of keys can be set to Latch. A latched key remains on when pressed once. Pressing the key again turns the note off. Latched notes can be useful to trigger loops or repeating rhythmic patterns without having to hold the key.

Latched notes work differently depending on whether Zones are enabled or disabled.

Latch Mode, Zones Disabled

Any range of keys (0-127) can be specified as latch notes. Therefore, you could set a range of latch keys that are only accessible with the keyboard transposed down, so as to be out the way in normal operation. Note that you cannot set a low key number higher than the high key, or a high key number lower than the low key.

Note latching is independent per MIDI channel. Notes can remain latched on a given channel while you switch to a different channel, either via direct channel setting change or via patch load. Additional notes can be latched on the new channel.

Turning Latch Mode off manually with the **Latch** button switches off all latched notes, regardless of their channel or the sequence in which they were latched.

Latched notes are NOT switched off upon loading a new patch in which Latch Mode is OFF. To turn these notes off, either return to the original MIDI channel and play the same notes again, or manually switch Latch Mode ON and then OFF.

Latching Notes

Latch
Low Note

Latch
High Note

These notes play normally
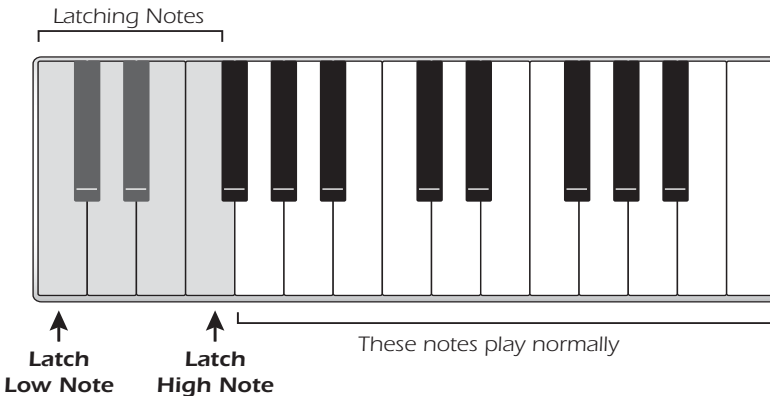
▶ **To Select Latch Mode:**

1. Press the **Latch** button. The **Latch** LED illuminates.

2. Press the button again to exit Latch Mode. The LED goes off.

▶ **To Set the Keyboard Range of Latched Notes:**

1. **Low Key ➜** Press the **Edit button**, illuminating the LED.

2. Press the keyboard key marked **Latch Low Note**.

3. Press the keyboard key of the lowest note you want to be in Latch Mode.

4. Press **Enter** to confirm the operation. Press **Home** to cancel the operation.

5. **High Key ➜** Press the **Edit button**, illuminating the LED.

6. Press the keyboard key marked **Latch High Note**.

7. Press the keyboard key of the Highest note you want to be in Latch Mode.

8. Press **Enter** to confirm the operation. Press **Home** to cancel the operation.

Latch Mode, Zones Enabled

If you have Zones enabled, the Latch Low Note and High Note settings are ignored. Instead, Latch Mode is handled on a per-zone basis. Use the Xboard Control software to turn latch mode on or off for each Zone. See "Note Latch Mode Enable" on page 59.

For zones with Latch Mode enabled, turning on Latch mode using the **Latch** button on your Xboard turns on latch for those zones.

Turning Latch Mode off manually with the **Latch** button switches off all latched notes, regardless of their channel or the sequence in which they were latched.

Latched notes are NOT switched off upon loading a new patch in which Latch Mode is OFF. To turn these notes off, either return to the original MIDI channel and play the same notes again, or manually switch Latch Mode ON and then OFF.

Snap Shot

The Xboard can store the settings of the 16 knobs and footpedal/footswitch with the Patch. When the Snap Shot button is pressed, the currently stored settings of all performance controls (knobs, wheels, footpedal) are transmitted. The initial setting of the footswitch is not transmitted.
Note: Snap Shot cannot transmit values for controls that are set to NRPN mode.

Here's an example of how you might use this feature. The knob settings can be stored with the Patch, and can either be transmitted when the Patch is selected or not. For the purpose of this example, suppose the knob settings are NOT transmitted when the Patch is selected. At a certain point in your song, you could press Snap Shot and completely change the sound by sending the stored controller messages.

This feature can also be used in conjunction with the Knob Bypass control to set up, and then send a group of MIDI continuous controllers messages at once. See the description of Bypass Mode.

Bypass Mode

When you move a controller knob on the Xboard, the position value is immediately transmitted via MIDI. Knob Bypass disables the transmission of MIDI messages from the knobs or control pedal/footswitch.

Bypass mode allows you to pre-set the knobs to a known position in order to avoid abrupt parameter jumps in performance when you turn the knob.

When Bypass is On, you can set the knobs anywhere you like without sending MIDI controller messages. When you turn Bypass Off again, nothing is transmitted, but the knobs are now in the desired position for your performance. When you turn a knob, the value of the new position will be sent.

This feature can also be used in conjunction with the Snap Shot feature. In Bypass mode, moving the controller knobs temporarily changes the stored settings. Pressing Snap Shot in Bypass mode transmits the stored settings with any changes you made while in Bypass mode.
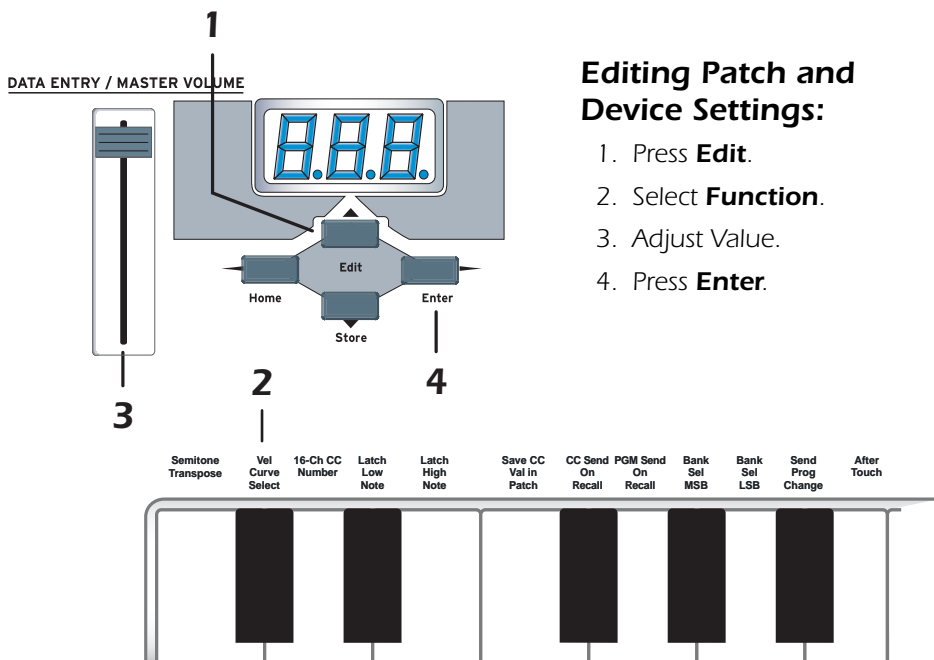
Note: Snap Shot cannot transmit values for controls that are set to NRPN mode.

Editing Patch and Device Settings

Many editable settings are accessed using the labelled keyboard keys or other controls.

▶ **To Edit a Setting:**

1. Press the **Edit** button. The Edit LED illuminates.

2. Select the desired setting by pressing one of the marked keyboard keys. (The Velocity Curve is being edited in the example below.)

3. Adjust the value of the parameter using the **Data Slider**, the **Numeric Keyboard Keys**, the **Octave Transpose** buttons, or the **Numeric Keypad** (Xboard 61 only). The **Enter** button will be flashing.

4. Press **Enter** to confirm the operation. Press **Home** to cancel the operation.

5. Remember to Store the Patch or your changes will be lost the next time you recall a stored patch, or when the Xboard is turned off. See .

DATA ENTRY / MASTER VOLUME

1

3

2

4

Edit

Home

Store

Enter

Editing Patch and Device Settings:

1. Press **Edit**.

2. Select **Function**.

3. Adjust Value.

4. Press **Enter**.

| Semitone Transpose | Vel Curve Select | 16-Ch CC Number | Latch Low Note | Latch High Note | Save CC Val in Patch | CC Send On Recall | PGM Send On Recall | Bank Sel MSB | Bank Sel LSB | Send Prog Change | After Touch |

Scrolling Text Display

In Edit mode, and in some other situations, the 3-digit numeric display serves double duty as a scrolling text display. When you first press the Edit button, the word "SELECt" scrolls continuously across the display, prompting you to select an edit parameter as described above. Once an edit parameter is selected, the current value of the parameter is displayed. After a short delay, the edit parameter name begins scrolling periodically across the display as a reminder of which parameter you're editing. Once you enter a value, the display stops scrolling.

You'll notice that the scrolling messages mix upper and lower case characters. This is a necessary compromise to display alphabetical characters on a numeric display.

Edit Parameters

These parameters are accessed via the **Edit** button. See "Editing Patch and Device Settings" on page 31 for detailed instructions about how to access the Edit mode.

PGM Send on Recall

Every Xboard patch stores a MIDI program change number (as well as Bank Select MSB and LSB settings) for each of the 16 MIDI channels. The "PGM Send On Recall" setting is a master switch which enables or disables transmission of the stored MIDI program change settings when a patch is recalled.

Select **on** to transmit the program changes, etc. stored in a patch when that patch is recalled. This allows you to reconfigure all of your MIDI instruments at once by simply recalling that patch. Select **oFF** if you don't want the stored program changes transmitted on patch recall.

This feature has a couple of tricky aspects which you need to be aware of in order to use it as intended:

- In addition to the master on/off switch, there is also an on/off switch per MIDI channel. When the master switch is set to on, program changes will be sent upon patch recall only on channels whose per-channel on/off switch is also set to on in the patch. This allows you to restrict program change sends to only the desired channels. However, unlike the master switch, these per-channel switch settings can only be modified using the Xboard Control editor application. Since all of these switches are set to off by default, full setup of this feature is possible only using that application.

- The master and per-channel on/off settings, as well as the program change and bank select numbers, are stored in and recalled from patches. They are not global settings and can be different from one patch to the next. Since they are applied immediately following recall of a patch, these settings must already be stored in a patch in order to have any effect upon what happens when the patch is recalled, and will apply only to that patch. It follows that the patch must be stored again anytime these settings get changed – otherwise, any changed settings will be lost.

Send Program Change

This function sends MIDI program changes to your external gear on the currently selected Basic MIDI channel. *(At the same time, it edits the program change number for the current MIDI channel in the active patch. See "PGM Send on Recall" on page 33 for more info.)*

Note that the program change send includes a send of Bank Select MSB and Bank Select LSB according to the settings for those parameters on the same MIDI channel in the current patch. See page 34.

▶ **To Send an External Program Change Via the Main Control Panel:**

1. Press the **Edit** button.

2. Press the **Send Prog Change** keyboard key.

3. Select the desired program change number from 0-127 using the **Data Slider**, **Octave Transpose** buttons, or **Numeric Keyboard Keys**.

4. Press **Enter** to send the program change.

5. Press **Home** to exit without sending the program change. *(This also leaves the program change setting for the current MIDI channel unmodified in the active patch.)*

▶ **To Send an External Program Change (Xboard 61):**

1. Make sure the **Program Change Mode** button's LED is lit. If not, press the button to light it.

2. Use the **Direct Patch Select** numerical buttons to enter a one- to three-digit program change number. Use the button labeled "10" to enter a "0."

3. Do one of the following:
   • If Zones are enabled, press the corresponding Zone button for the MIDI channel you want to send the Program change across. If you want to send the Program Change over the current MIDI channel, press **Enter** or the **Program Change Mode** button (they will be blinking).
   • If Zones are not enabled, press **Enter** or the **Program Change Mode** button (they will both be blinking).

Bank Sel MSB

This parameter allows you to select the MIDI Bank Select MSB (most significant byte) that will be used when sending program changes via the Prog Change, PGM Browse Mode or PGM Send On Recall features.

Select a Bank MSB from 0-127. Note that this merely edits the Bank Select MSB setting for the current MIDI channel in the active patch. It does not cause a MIDI message to be sent immediately.

For more information on MIDI Bank Select commands, see page 65.

Bank Sel LSB

This parameter allows you to select the MIDI Bank Select LSB (least significant byte) that will be used when sending program changes via the Send Prog Change, PGM Browse Mode or PGM Send On Recall features.

Select a Bank Select LSB from 0-127. Note that this merely edits the Bank Select LSB setting for the current MIDI channel in the active patch. It does not cause a MIDI message to be sent immediately. For more information on MIDI Bank Select commands, see page 65.

Program Change (PGM) Browse Mode

This function allows you to play the keyboard and use the wheels and rotary controls while browsing through MIDI programs. Program change messages are sent on the Basic MIDI channel as described above (See "Send Program Change" on page 34.). This includes sending Bank Select MSB and Bank Select LSB according to current settings for that MIDI channel in the active patch.

▶ **To Browse MIDI Program Changes:**

1. Press the **Edit** button.

2. Press the **PGM Browse Mode** keyboard key. The display shows the current program change setting for the patch's basic MIDI channel.

3. Select the desired program change number using the **Data Slider** or the **Octave Transpose** buttons. The program change numbers are shown on the display. (In order to avoid sending continuous barrages of program change messages which might confuse receiving equipment, program change messages are transmitted only when the slider stops moving for one second. The display will briefly show "---" whenever this occurs.) You can play the keyboard and use other performance controllers to audition the selected program.

4. Press **Enter**.

   Press **Home** to leave the program change setting for the current MIDI channel unmodified in the active patch. The unmodified setting is used in one final program change message send to restore the previously-loaded program in any device which is receiving on that channel.

CC Send On Recall

Every Xboard patch stores an initial value (position) setting for each of the 16 Controller Knobs, the Pitch Wheel, the Mod Wheel and the Footpedal. The "CC Send On Recall" setting enables or disables transmission of these stored values when a patch is recalled.

Select **on** to transmit the values stored in a patch when that patch is recalled. In conjunction with the "Save CC Values In Patch" feature, which lets you control the settings which get stored in a patch (see below), this allows you to simultaneously preset many individual parameters of your MIDI instruments exactly as desired, by simply recalling that patch. (If "PGM Send On Recall" is also switched on in the same patch, the program changes are sent first, followed by the controller messages, so that the controller messages will affect the newly-loaded programs.)

When set to **oFF**, the continuous controller settings will not be transmitted when the patch is selected.

> **Note:** This feature has a tricky aspect which you need to be aware of in order to use it as intended:

> The "CC Send On Recall" setting is stored in and recalled from patches. It is not a global setting and can be different from one patch to the next. Since it is applied immediately following recall of a patch, this setting must be stored in a patch in order to have any effect upon what happens when the patch is recalled, and will apply only to that patch. It follows that the patch must be stored again anytime this setting gets changed – otherwise, the changed setting will be lost.

Save CC Value in Patch

This setting is useful in conjunction with the "CC Send On Recall" feature (see above). When this parameter is set to **On**, the current initial value (position) settings of the 16 Controller Knobs, the Pitch Wheel. the Mod Wheel and the Footpedal will be stored in a patch when the patch is stored. If this setting is **oFF**, the existing controller initial value settings in the patch are retained, even if you have adjusted one or more controls in the meantime. Therefore, turning this option oFF effectively "locks" the controller initial value settings into the patch.

Note that this setting is applied when you store a patch, not just after the patch is recalled, and is thus effective immediately upon being changed – unlike some settings discussed above, it doesn't need to first be stored in a patch in order to become effective.

Note: You cannot save values for controllers that are set to NRPN mode.

Tips for Use...

Assuming you wish to use the "CC Send On Recall" feature with a particular patch, turn this option **on** while editing the controller initial value settings in that patch. Once you've stored the patch with the desired initial controller settings, switch this option **oFF** and store the patch one more time. This will save the **oFF** setting for this option in the patch. Since the **on/oFF** setting will also be recalled whenever you recall the patch, the **oFF** setting ensures that the initial controller settings won't be accidentally overwritten if you later change some other setting in the patch and store it again. If you later want to change one or more of these settings, simply switch the setting back on before storing the patch with the updated settings (and don't forget afterwards to switch the option back oFF and store the patch again as described above, to lock in the updated settings).

Aftertouch On/Off

When Aftertouch is On, the keyboard will transmit channel aftertouch messages. Aftertouch is transmitted when additional pressure is applied to the keyboard after the keys have been pressed.

Select **on** to turn Aftertouch on, or **oFF** to turn it off.

Note: This setting, unlike most of the settings described in this section, is a device setting, which is not stored in or recalled from patches. It is thus also a global setting which affects all patches in common – or rather, it affects device behavior independently of patches.

Semitone Transpose

The keyboard can be transposed up or down in one-semitone steps. Transpose works by shifting the keyboard position relative to middle C.

The transposition range is -64 to +63 semitones.

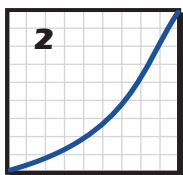**Note**: Semitone Transpose is disabled when Zones are enabled.

Velocity Curve Select

This function selects one of the eight velocity curves to customize the feel of the keyboard. When playing a velocity-sensitive sound (such as piano), select a curve that provides the most natural response to your playing style.
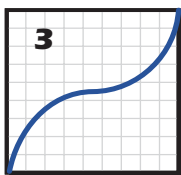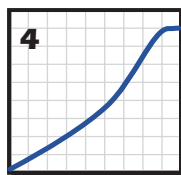
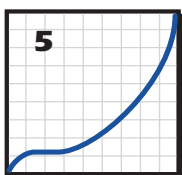Select a curve from 1 to 8.
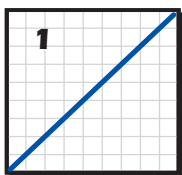
Linear - No change to velocity.

Compressed - For hard players.

Medium - Outputs medium velocity. Compressed dynamics
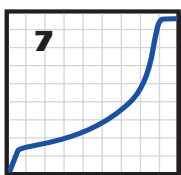
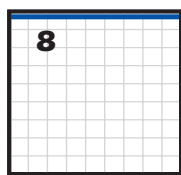**Compress/Limit** - Outputs medium values. Limits dynamics.

Low Vel 1 - Extreme compression. Outputs low velocity values.
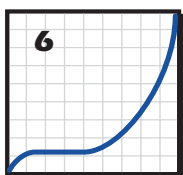
Low Vel 2 - Extreme compression. Outputs low velocity values.

Compressed - with top and bottom ends cut.

Full Velocity - Only outputs full velocity.

You can also select the MIDI minimum velocity, which essentially reduces the vertical scale of the above drawings. See .

16 Channel CC Number

16 Channel Control mode is a special performance mode in which all 16 knobs send one CC number on MIDI channels 1 through 16. This allows you to control a single parameter on all 16 MIDI channels. See for more information about how to use this function.

Latch High/Low Note

These keys allow you to set the keyboard range for Latch mode. See , for detailed information about Latch mode.

X1 and X2 Functions

The X1 key accesses the X1 functions. These are global functions that affect all patches. For example, if Pedal is set to Sus, it will remain so for all patches.

- **Mid** - Out or Thru - When **Out** is selected, the MIDI output transmits local data from the keyboard and knobs. When **Thru** is selected, the MIDI output transmits data from the host application.
- **PEd** - Selects between a footswitch (SuS) or a continuous footpedal (ctL)
- **ind** - Turns the decimal point USB/MIDI indicators on or off. See .
- **Zod** - Turns the zones status message on or off.
- **PbM** - Determines the behavior of the Numeric Keypad after you send a program change.
- **CAL** - The Calibration sub-menu. The functions here allow you to make very specific calibrations. These settings are for advanced users.

The X2 key accesses the X2 functions. These are global functions which affect only the active patch. For example, if you turn Zones off it will remain so for only the active patch.

- **ZoE** - Enables and disables Zones functions in the active patch.

▶ To Select one of the X1 or X2 Functions:

1. Press the **Edit button**. The Edit LED illuminates.
2. Select **X1** or **X2**.
3. Adjust the **data slider** or use the **Octave Transpose** buttons to view the functions.
4. Press **Enter** to select the desired function.
5. Select the desired value using the **data slider** or the **Octave Transpose** buttons (except with CAL).
6. Press **Enter** to confirm your selection. Press **Home** to cancel the operation.

X1 Menu Items

The following is a description of the items located in the X1 menu.

MIDI (Mid)

The Xboard can function as a MIDI interface between your computer applications and external MIDI gear. When set to **Thru**, MIDI data from your computer application is transmitted on the Xboard's MIDI output jack. When **Out** is selected, the MIDI output transmits local data from the keyboard and knobs.

Xboard keyboard and controller data is **NOT transmitted** from the MIDI output when this function is set to **Thru**. *(Keyboard/Controller data is always sent via USB.)*

Pedal (PEd)

This function sets up the Footswitch / Footpedal input to accept a switch or a variable pedal control input.

- **SuS** = Sustain or footswitch input. In this mode, the Xboard automatically senses the footswitch polarity on power up (either normally-open, or normally-closed). Because of the automatic sensing feature, you should not hold down the footswitch during power up or the switch action will be reversed.
- **ctL** = Control Pedal. The Xboard accepts control pedals wired as shown on .

Indicators (ind)

The decimal points in the LED indicate USB and MIDI activity. Select **on** or **oFF**. 1st = **USB In**; 2nd = **USB Out**; 3rd = **MIDI Out**.

Zones On/Off Status Display (Zod)

Select **on** or **oFF**.

If on, when you select a new patch, the Edit LED display shows a message indicating whether zones enabled or disabled in the new patch. This is especially useful for the Xboard 25 and Xboard 49, since they don't have a Zones Enable button.

Patch Buttons Program Change Mode Auto-Disable (PbM)

Select **on** or **oFF**.

With this setting on, the Program Change Mode button turns off automatically after you send a program change, returning the numeric keypad to Direct Patch Select Mode.

With this setting off, the Numeric Keypad remains in Program Change mode after you send a program change.

Calibrate Sub-Menu (CAL)

When you select CAL and press Enter, you are taken to the CAL sub-menu, which contains calibration functions. To select a function, use the data slider to select a Calibration function, and press **Enter**. To cancel, press **Home**.

CCM

This feature enables you to calibrate any control on your Xboard, one at a time, optimizing your Xboard's action for your playing technique.

After you select the CCM function and press **Enter**, all LEDs on the Xboard turn off (except the display, which says "adjust a control"). This is Calibration Standby mode. What you do next depends on which control you want to calibrate.

▶ **To Calibrate a Controller Knob, Mod Wheel, or Data Entry Slider:**

1. Sweep through all possible values **without pressing harder either direction than you normally would**. As you adjust, the display shows raw control values, reverting to the name of the control you are adjusting.

2. Press **Enter** to store the calibration, or press **Home** to back out of the process. You are returned to the Calibration Standby mode.

3. Press **Enter** to calibrate another control, or **Home** to finish.

▶ **To Calibrate the Pitch Wheel:**

1. Sweep through all possible values **without pressing harder in either direction than you normally would**. As you adjust, the display shows raw control values, reverting to the word "Pit" (as in "Pitch Wheel").

2. Let the Pitch Wheel spring back to its normal position in the center.

3. Press the illuminated **Snap Shot** button. The Edit LED should say "Ctr" (as in "Center"). You can repeat this step as many times as you want.

4. Press **Enter**. You are returned to the Calibration Standby mode.

5. Press **Enter** to calibrate another control, or **Home** to finish.

▶ **To Calibrate Aftertouch using One or More Keys:**

1. Press and hold the key(s) you want to use for calibration. Use the maximum amount of force you want for Aftertouch. The Edit LED alternates between the current key value and the word "Aft" (as in "Aftertouch").

2. Press and hold the key(s) with the minimum amount of force at which you want the Xboard to begin sending Aftertouch messages.

3. While holding the key(s), press the **Snap Shot** button. The Edit LED should say "tHr" (as in Threshold).You can repeat this step as many times as you want.

4. Press **Enter** to store the calibration, or press **Home** to back out of the process. You are returned to the Calibration Standby mode.

5. Press **Enter** to calibrate another control, or **Home** to finish.

MIDI Minimum Velocity (UMi)

This setting allows you to choose the lowest possible velocity for your Xboard. Raising the lowest possible velocity keeps the shape of the velocity curves, but in effect "crunches" them. Look at the example below. If you're using Velocity Curve 1, and you change the low velocity to 28, the curve maintains the same shape, but has a smaller vertical scale.

Low Velocity = 1 (default)   Low Velocity = 28
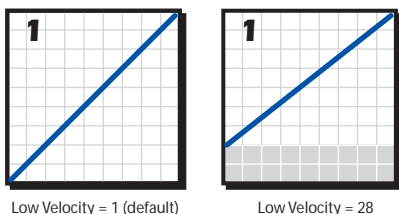
Bear in mind that you aren't changing the actual Velocity Curve— you're changing a device setting that affects all velocity curves the same way. So, if you switch to a different velocity curve, the Low Velocity stays the same.

Velocity Sense Time Limit Low (tLo)

Select a Value between 0 and 998 (default value: 20).

This sets the lower limit for keystroke timing, and thus adjusts the detection of *maximum* velocity. The lower you set this setting, the harder you will have to strike the keys in order to produce a maximum-velocity MIDI Note On message. Below a setting of 10 or so, you may find it impossible to produce a maximum-velocity MIDI Note On message.

Velocity Sense Time Limit High (tHi)

Select a Value between 1 and 999 (default value: 255).

This sets the upper limit for keystroke timing, and thus adjusts the detection of *minimum* velocity. The higher you set this setting, the softer you will have to strike the keys in order to produce a minimum-velocity MIDI Note On message.

Note that increasing the Low setting beyond the existing High setting will result in the High setting being changed automatically so that it remains higher than the new Low setting, and vice versa. Setting the velocity sense time limit values too close to one another will result in jumpy, "either/or" playing dynamics (either very loud or very soft).

Aftertouch Sense Level Limit Low (ALo)

Select a Value between 0 and 998 (default value: 80).

This sets the lower limit for the Aftertouch sensing circuit. It is thus the threshold setting, which determines how much pressure you have to apply in order to make the Xboard *begin* ending Aftertouch messages. If this setting is adjusted too low, you may find it difficult to play the keyboard *without* sending Aftertouch messages.

Aftertouch Sense Level Limit High (AHi)

Select a Value between 1 and 999 (default value: 600).

This sets the upper limit for the Aftertouch sensing circuit. It thus determines how much pressure you have to apply in order to make the Xboard send a maximum-value Aftertouch message. If this setting is adjusted too high, you may find it impossible to produce a maximum-value Aftertouch message, regardless of how hard you press.

Note that increasing the Low setting beyond the existing High setting will result in the High setting being changed automatically so that it remains higher than the new Low setting, and vice versa. Setting the aftertouch sense level limit values too close to one another will result in jumpy, "either/or" response (either no aftertouch or maximum aftertouch).

X2 Menu Items

The following is a description of the items located in the X2 menu.

Zones Enable in Patch (ZoE)

Select **on** or **oFF**.

Turns all zones on or off in the active patch. For the Xboard 61, this serves the exact same function as the Zones Enable button. It is most useful on the Xboard 25 or Xboard 49, since they don't have a Zones Enable button.

E-MU XBOARD CONTROL

The E-MU Xboard Control software allows you to easily edit and then archive Xboard patches on your PC or Mac. All the features of the Xboard are logically displayed on a single page, which makes patch editing a breeze.

Xboard Control makes it easy to mix and match your favorite Xboard patches, then save or archive them on your host computer.

In addition, the Xboard Control allows you to program several other parameters, which are not accessible from the Xboard keyboard. The additional features are as follows:

- Xboard can send a different program change on any or all MIDI channels when a new Patch is selected.
- The MIDI channel and CC number can be set independently for each of the 16 controller knobs.
- The Pitch Wheels and Control Pedal can be reprogrammed to send any desired CC message.
- Knob controllers and Xboard patches and banks can be named with up to 16 characters.

Definitions

Active Patch   The "live" patch in the Xboard – the one that's currently "in control". Whenever you edit patch settings using the Xboard Control Patch Editor view or via the Xboard's front panel, you're editing the active patch. This patch usually starts out as a copy of one of the stored patches, but is itself only temporary — it must be stored in order to retain any changes you make to patch settings, which are otherwise lost the next time a patch is recalled or the Xboard is switched off.

Bank   A set of 16 patches representing one complete memory dump from the Xboard.

Patch   One complete set of parameters for the Xboard.

Refresh   This function updates the Xboard Control application so that it holds current copies of the stored patches and the active patch in the Xboard. Refresh is not performed automatically, You must manually Refresh if you have made edits on the Xboard**.**

Store   The act of writing a patch into the Xboard non-volatile memory.

Zone   One of four user-defined ranges of keys and velocities that share certain parameters such as MIDI channel, Aftertouch, Sustain pedal, etc. In essence, using multiple zones allows you to divide your keyboard into different keyboards with different settings. When Zones overlap, and are enabled, pressing a key that is shared by both zones sends information across each Zone's MIDI channel using each zone's settings. Enable or disable individual Zones using the Keyboard Zones buttons on the Xboard 61, or using E-MU Xboard Control software.

Xboard Control Window

The Xboard Control window is divided into two sections: Bank View, and Patch Editor/Zones View.

Bank View Section   **Patch Editor/Zones Tabs**   **Patch Editor/Zones Section**

Currently selected Patch

Select a Patch by Clicking on it Here
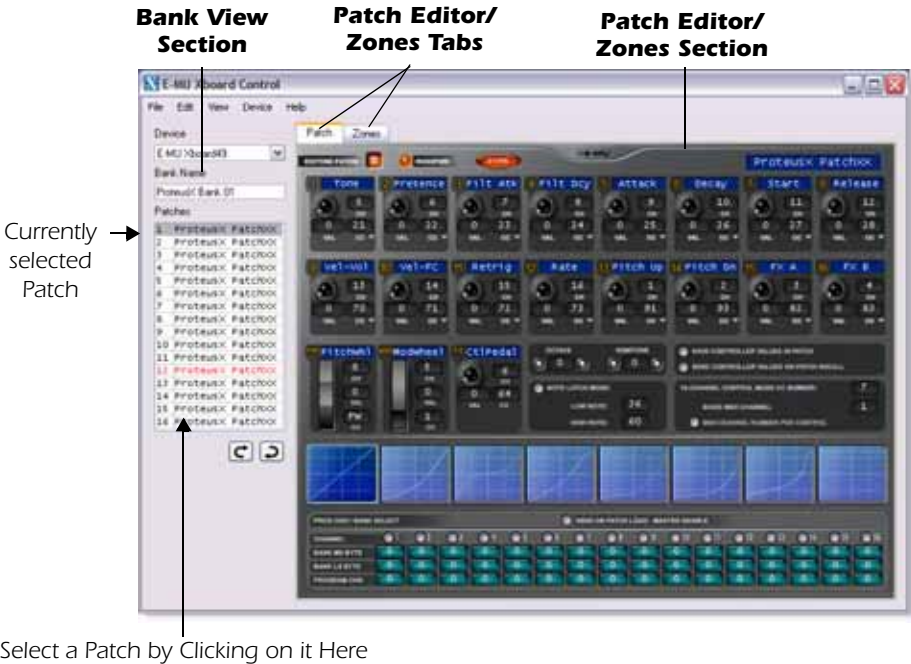
Bank View

The bank view shows the set of 16 patches that is currently stored in the Xboard.

Select a Patch by clicking its Name in the Bank View section.

IMPORTANT: Any changes made via the Bank View are relayed immediately to the Xboard and modify the patches stored there. This ensures that the Bank View always accurately depicts the state of the Xboard's patch storage – as long as all changes are made from Xboard Control only. The reverse is NOT true – changes made directly on the Xboard itself are NOT transferred back to Xboard Control until you update it using the Refresh function in the View menu.

Depending on the setting in the Preferences menu, a patch which has been modified in the Patch Editor will either be automatically stored in the Xboard when you select a new patch via the Bank View, or a pop-up dialog box will appear asking whether or not you want to store the patch. Whenever an edited patch is Stored, the Patch Name turns Red until the bank or patch is saved to disk.
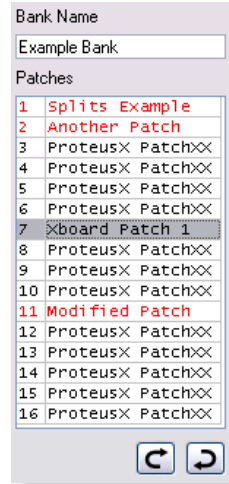
Dragging and Dropping

You can browse through your computer to locate Xboard bank and patch files.

▶ **Loading Bank or Patch Files:**

- Bank files can be loaded by simply dragging them from your desktop onto the Bank View section.
- Patch files can be loaded by simply dragging them from your desktop onto a patch location in the Bank View.

IMPORTANT: Note that banks or patches that are loaded into Xboard Control from disk files will be immediately downloaded to the Xboard and will overwrite patches that are stored there.

Changing the Order of Patches

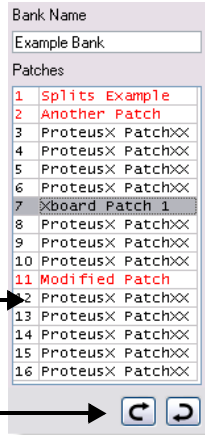You can change the numerical position of a patch by selecting it and clicking the **Up** and **Down** buttons.

Desktop

*You can drag and drop Patches
and Banks from your Desktop
to the Bank View section.*

Bank View

Bank Name

Example Bank

Patches

1	Splits Example
2	Another Patch
3	ProteusX PatchXX
4	ProteusX PatchXX
5	ProteusX PatchXX
6	ProteusX PatchXX
7	Xboard Patch 1
8	ProteusX PatchXX
9	ProteusX PatchXX
10	ProteusX PatchXX
11	Modified Patch
12	ProteusX PatchXX
13	ProteusX PatchXX
14	ProteusX PatchXX
15	ProteusX PatchXX
16	ProteusX PatchXX

Xboard
Bank 1.xbb

Xboard
Patch 1.xbp

*Select a Patch by clicking its
Name in the Bank View section.*

*Change the order of patches
using the Up or Down buttons*

Device

The Device field allows you to switch to a different Xboard in the event that you have more than one Xboard connected to your computer. The list displays only the Xboard devices which are connected to the system. When a new selection is made, that connection becomes the default connection the next time the program is launched.

Re-selecting the current Xboard is useful to re-establish lost communication between your computer and the Xboard and will also "Refresh" the editor with the current Xboard settings.

Basic Operation

All patch parameters can be edited in this screen.

IMPORTANT: Any changes made via the Patch Editor are downloaded immediately to the Xboard's active patch and become immediately effective there (note that these changes DO NOT affect stored patches until you store the modified patch via one of the methods described below). This ensures that the Patch Editor always accurately depicts the state of the Xboard's active patch – as long as all changes are made from Xboard Control only. The reverse is NOT true – changes made directly on the Xboard itself are NOT transferred back to Xboard Control until you update it using the Refresh function in the View menu.

▶ *Changing Settings:*

- Knob or wheel changes can be made by moving the knob or wheel.
- Numeric values can be edited by typing in the field.

▶ *Storing Patches:*

- Pressing the **Store** button immediately stores the current Patch to the Xboard.
- **Selecting a different patch** in the Bank View section causes the patch you last were editing to be automatically stored in the Xboard. See Prefs on .

▶ *Changing Patches:*

- Select a new patch from the Bank View, Patches section. Any changes you made to the previous patch will be automatically stored in the Xboard.

Patch Modified Indicator

This indicator lights whenever the displayed patch settings are not identical to the same-numbered patch stored in the Xboard.

Patch Name

This field allows you to assign a name of up to 16 characters to each patch.

Patch Editor Tab

Current Patch
Number

Patch Modified
Indicator

Store Current
Patch Button

Patch
Name

MIDI
Controller
Knob
Settings

Keyboard
Settings

Velocity
Curves

Stored Program Changes Sent on Patch Recall
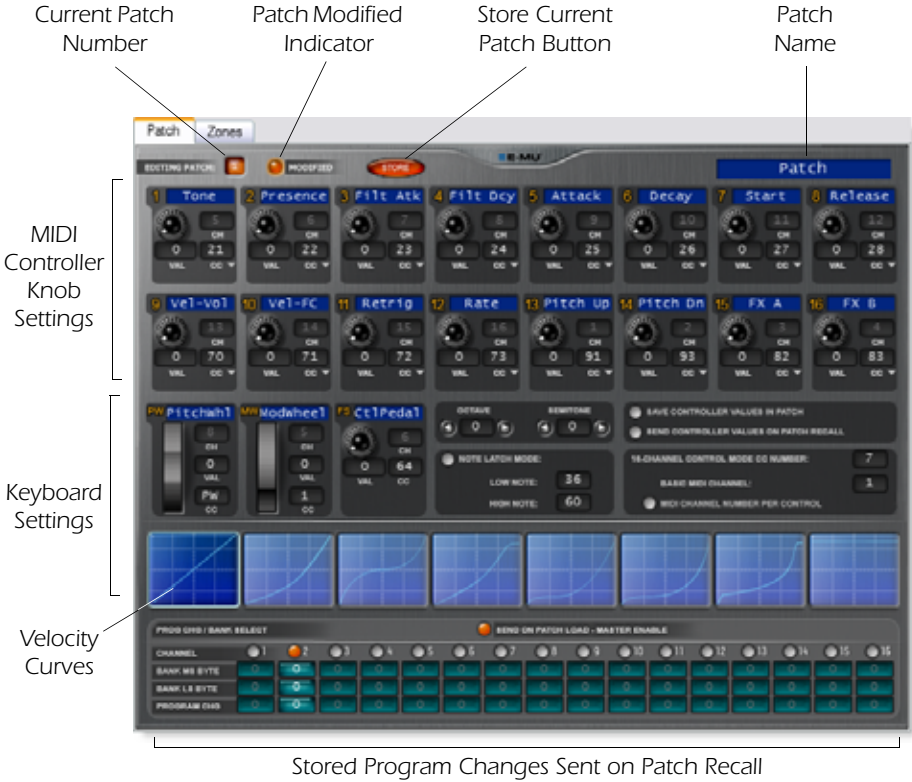
MIDI Controller Knob Settings

This group of 16 controls corresponds to the 16
controller knobs on the Xboard. The 8-character
label is visible only in the Xboard Control.

Label Field

MIDI Channel

CC Type Drop-
down

Value Knob

Initial Knob Settings

Turning the knob on the screen won't affect your
soft-synth since this doesn't cause any CC
messages to be sent. Instead, you can set the value
using the Xboard knob, which does send CC messages, then select **Refresh** from
the **View** menu to update the screen.

NOTE: NRPN Mode does not have initial knob settings.
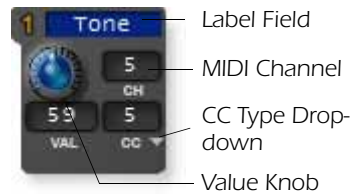
MIDI Channel
This field allows you to set the MIDI channel for each knob. This field is "greyed out" (and unavailable) unless the "MIDI Channel Number Per Control" option is selected (see below). Normally, all the controller knobs use the Basic MIDI channel. The "MIDI Channel Number Per Control" option allows you to select a different MIDI channel for each knob, the wheels, and the footpedal. This feature is only accessible from the Xboard Control software.

CC Type
From the CC type drop-down menu, there are three available types of continuous controllers: **CC** mode, **3D MIDI** mode, and **NRPN** mode.

CC Mode
This is the standard (and default) Continuous Controller mode. The continuous controller is stepped in values from 0 through 127.

Val   This field displays the exact initial position of the continuous controller knob. Numeric values from 0 to 127 can be directly typed in.

CC   The CC Channel number field allows you to set the MIDI continuous controller number (0-127) for each knob. The Xboard CC numbers must match the CC numbers on your synthesizer in order to operate.

    Note: Don't confuse MIDI channels with MIDI CC numbers. See "MIDI Channels & Continuous Controllers" on page 64 for more information.

3D MIDI Mode
For Creative products, such as the X-Fi, that support 3D MIDI technology.

Val   This field displays the exact initial position of the controller knob. Numeric values from 0 to 16383 can be directly typed in.

Right-Click

3D   The 3D number field allows you to set the 3D MIDI parameter number (0-8) for each knob. Right-click the **3D** field to see and select from a description of values 0 through 8 (values above 8 are not currently used for 3D MIDI).

0. Azimuth Angle
1. Elevation Angle
2. Gain
3. Distance Ratio
4. Maximum Distance
5. Gain at Maximum Distance
6. Reference Distance Ratio
7. Pan Spread Angle
8. Roll Angle

NRPN Mode

For devices that support NRPNs (Non-Registered Parameter Numbers). NRPN messages can span across two controller numbers (LSB and MSB), increasing the range of potential values. A complete NRPN message consists of NRPN parameters LSB and MSB (set in the Xboard Control) and NRPN data LSB and MSB (sent by the Continuous Controller).

NOTE: NRPN mode does not have an Initial Controller setting.

L   This value (0-127) defines NRPN parameter LSB (Least Significant Byte).

M   This value (0-127) defines NRPN parameter MSB (Most Significant Byte).

Keyboard Settings

Basic MIDI Channel:

The keyboard always transmits on the basic MIDI channel. The controller knobs, wheels and footpedal/footswitch also transmit on the Basic MIDI channel, except when the "MIDI Channel Number Per Control" option is selected.

MIDI Channel Number Per Control
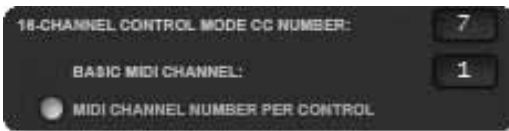
> *The keyboard ALWAYS transmits on this MIDI channel. The knobs also transmit on this channel, except when "MIDI Channel" Number Per Control" is selected.*

Normally, the keyboard and all controllers are transmitted on the Basic MIDI channel. This option allows you to select any MIDI channel for each knob, the two wheels and the footpedal. The example below shows how you might control four parameters on four different synthesizers using the sixteen controller knobs.

Volume on MIDI Ch. 1-4   **Filter Cutoff on MIDI Ch. 1-4**

Env. Decay on MIDI Ch. 1-4   **LFO Rate on MIDI Ch. 1-4**
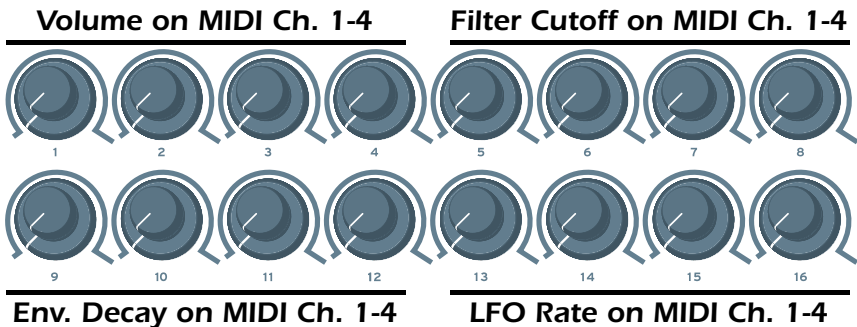
16 Channel Control Mode CC Number

This is the continuous controller number that will be used for all 16 knobs when the 16 Channel Control mode is enabled. See .

16 Channel Control mode is a special performance mode in which all 16 knobs send one CC number on MIDI channels 1 through 16. This allows you to control one parameter on all 16 MIDI channels. For example, if the controller number were set to #7 (Channel Volume), the knobs could be used to mix the volume of all 16 MIDI channels.

Pitch Wheel Settings
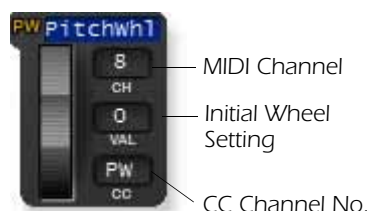
The pitch wheel can either be programmed as a MIDI pitch bender or set to any MIDI continuous controller number with an initial setting, CC number and MIDI channel.

The normal use for the spring-loaded pitch wheel is a pitch bender. A pitch wheel is a special type of MIDI controller with higher resolution and its own dedicated CC channel.

When any alphabetical character is typed into the CC channel number field, the entry changes to read "PW", and the control operates as a pitch wheel. (The "Restore Pitch Wheel" option in the Edit menu also sets this controller to the Pitch Wheel function.)

When moved with the mouse, the screen wheel jumps back to the center setting when released, just like its counterpart on the Xboard. You can pre-set the initial setting of the Pitch Wheel by typing a number into the value field.

If a number from 0-127 is entered in the CC fields, the wheel becomes an ordinary continuous controller and the screen wheel no longer jumps back to the center position when released.

The MIDI Channel field allows you to set the MIDI channel for the pitch wheel. This field is unavailable unless the "MIDI Channel Number Per Control" option is selected. (See .) Note that it is possible to use this control to set the pitch wheel to a MIDI channel other than the one the keyboard is using.

Mod Wheel Settings
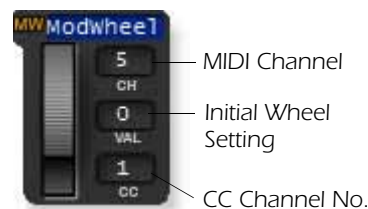
The modulation wheel settings are programmable just like the other controller knobs with an initial setting, CC number and MIDI channel. The MIDI Channel field allows you to set the MIDI channel for the mod wheel. This field is unavailable unless the "MIDI Channel Number Per Control" option is selected. (See .)

You will normally leave the Mod Wheel set to its default setting of CC 1, since this is a standard function on every MIDI synthesizer.

Pedal/Footswitch Settings

FS Ct1Pedal

MIDI Channel — 6 CH
CC Channel Nc — 64 CC
Initial Pedal Setting — 0 VAL

The Control Pedal input accepts either a momentary-on footswitch or a continuously variable pedal. Like the other controllers, an initial setting, CC number and MIDI channel can be programmed. The MIDI Channel field allows you to set the MIDI channel for the mod wheel. This field is unavailable unless the "MIDI Channel Number Per Control" option is selected (See) The default setting for the Control Pedal is CC 64, which is the standard MIDI sustain pedal number.

Octave / Semitone Transpose Settings

OCTAVE 0   SEMITONE 0

These settings allow you to transpose the keyboard up or down in octave or semitone steps. The octave transpose range is ±4 octaves. The semitone transposition range is -64 to +63 semitones.

Note: Semitone Transpose is disabled when Zones are enabled.

Note Latch Mode Settings

NOTE LATCH MODE:
LOW NOTE: 36
HIGH NOTE: 60
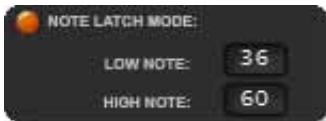
This section allows you to program the high and low keys for latch mode, as described on . You can also turn latch mode on or off by pressing the amber-colored button. Note that you cannot set a low key number higher than the high key, or a high key number lower than the low key.

Save Controller Values in Patch
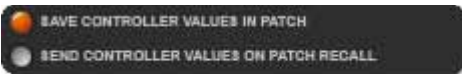
SAVE CONTROLLER VALUES IN PATCH
SEND CONTROLLER VALUES ON PATCH RECALL

When this parameter is set to On, the current initial value (position) settings of the 16 Controller Knobs, the Pitch Wheel, the Mod Wheel and the Footpedal will be stored in the patch when the patch is stored via the Xboard front panel. *Note that this setting has no effect upon storage of patches from Xboard Control, in which all settings are always stored to the Xboard exactly as they appear onscreen.*

If this parameter is **Off**, the existing continuous controller settings are retained.

Send Controller Values on Patch Recall

When this parameter is set to On, the stored initial value (position) settings of the 16 Controller Knobs, the Pitch Wheel, the Mod Wheel and the Footpedal will be transmitted when the patch is recalled via the Xboard front panel. When set to **Off**, the stored controller initial value settings will not be transmitted when the patch is recalled via the Xboard front panel. *This setting affects only the behavior of the Xboard itself. Selecting patches in Xboard Control does not cause controller messages to be sent from either the host computer or the Xboard.*

Note: Pressing the Xboard's **Snapshot** button will immediately send the patch's stored controller values, regardless of whether this parameter is On or Off.

Velocity Curve Select

This function selects one of the eight velocity curves to customize the velocity response of the keyboard. Select a synthesizer preset that has velocity programmed (such as a piano), then choose a curve that gives you the best control.

Click on an image to select the desired velocity curve for the patch. See page 38 for descriptions of the curves.

Program Change per MIDI Channel

Master Enable
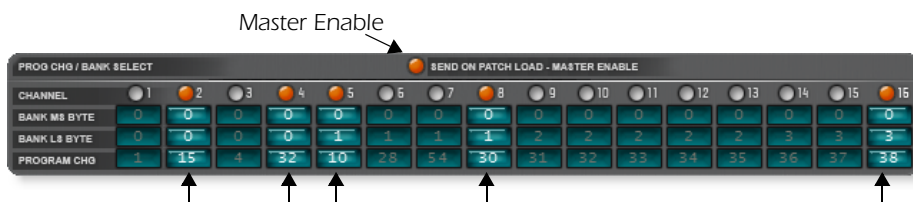
In this example, five program changes will be transmitted.

The Xboard has the ability to transmit a MIDI Program Change on each of the 16 MIDI channels whenever a patch is recalled via the Xboard front panel. This feature allows you to set up all your MIDI instruments for a performance by simply selecting a patch on the Xboard. Program Bank MSB and LSB numbers are also transmitted. See "MIDI Bank Select Commands" on page 65 for more information.

The Master Enable button turns Program Change transmit on or off for the patch as a whole. *(Note: this setting is the same as the Xboard "PGM Send On Recall" setting described on page 33.)* The enable buttons over each channel slot allow you to select which channels will transmit program change messages when the patch is recalled. Note that the per-channel enable settings can be edited only via Xboard Control.

Zones Tab

The Zones tab allows you to define your Zones by keyboard range and velocity range. For each of the four Zones, you can see a graphical representation of the keyboard and velocity ranges. In addition, for each Zone you can enable/disable the Mod Wheel, the Pitch Wheel, Aftertouch, the Sustain Pedal, Note Latch and Octave Transpose.

Individual Zones Settings
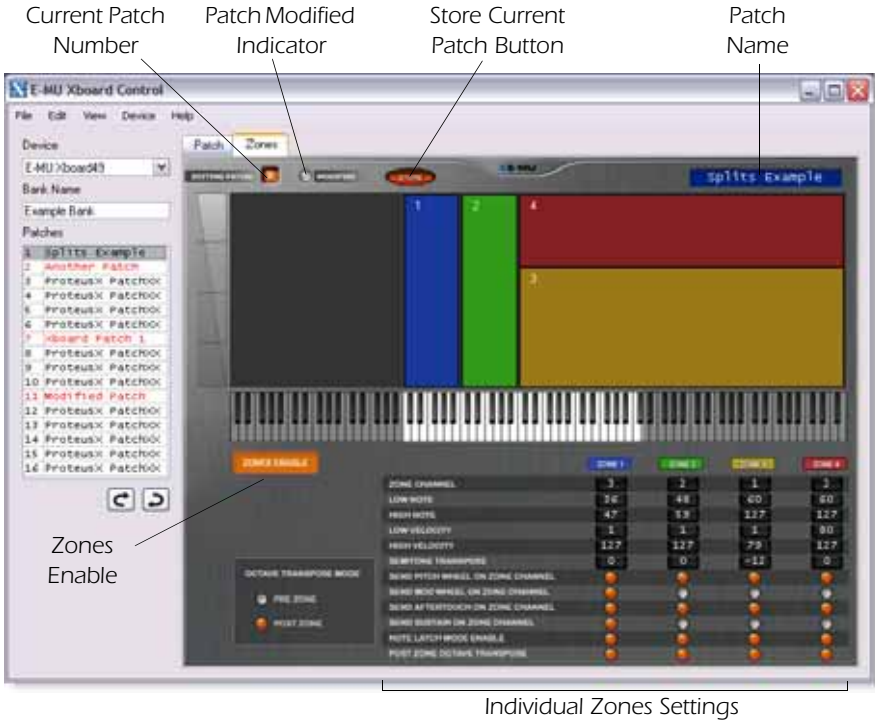
The information at the top of the Zones tab is the same as that in the Patch tab. You can see which patch you're editing, and whether it's been modified. You can Store the patch, and change the name.

Zones Graphical Display

The Zones display shows you a graphic representation of the Keyboard and Velocity range of each Zone.

Horizontally, the display shows you the Keyboard range of each Zone, which corresponds with the graphical keyboard just below. Vertically, the display shows the Velocity range of each Zone.

As you can see in the illustration below, Zones 1 and 2 have been set up so they have the same velocity range, but occupy different areas of the keyboard. This type of setup is useful for playing different synthesizers with the same controller.

Zones 3 and 4 occupy the same region of the keyboard, but use different velocity ranges. This type of setup is useful for velocity crosswitching between samples.
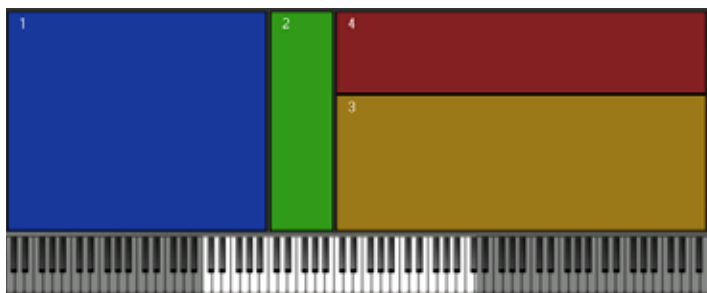
Zones Settings

Enable/Disable Zones, and choose Zones settings in the bottom half of the Zones tab.

Global Zones Settings

The **Enable All** and **Octave Transpose** controls affect all four zones.

Zones Enable

This button enables/disables Zones. This serves the identical function as the Zones enable button on the Xboard 61.

Octave Transpose Mode

These radio buttons determine what method of octave transposition is used when zones are enabled.
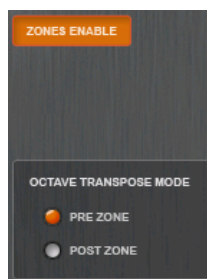
Pre Zone

When you press the Octave Transpose buttons on your Xboard, the octave of the keyboard changes, but individual Zones are not transposed. This is kind of like sliding the keyboard up or down an octave, which is useful for reaching zones outside the current keyboard range. In the example below, transposing up two octaves makes Zone 4 accessible, and Zone 1 inaccessible.
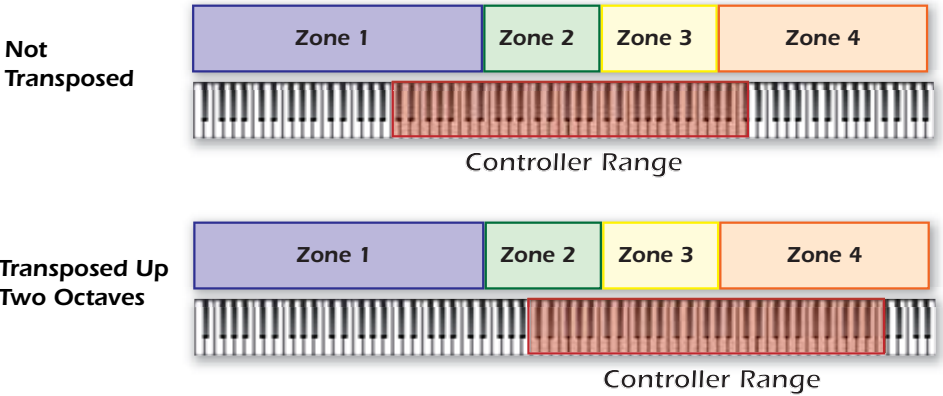
Post Zone

When you press the Octave Transpose buttons on your Xboard, each zone that has **Post Zone Octave Transpose** enabled is transposed.
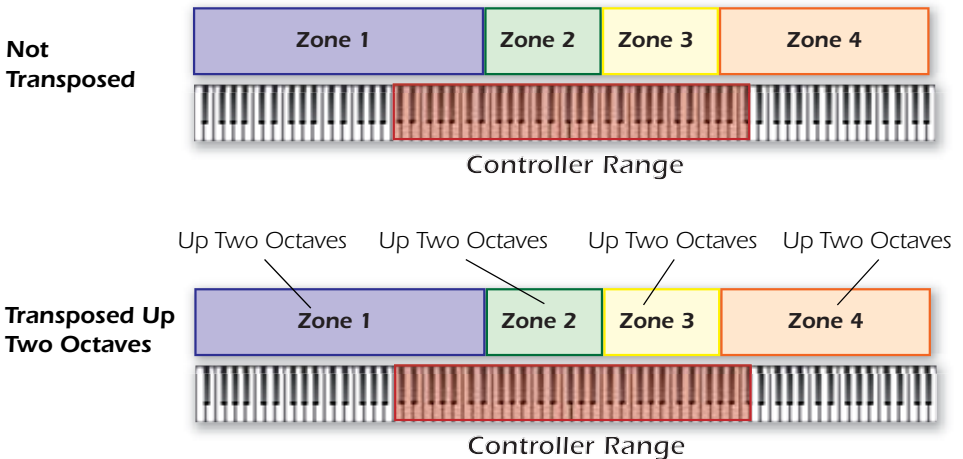
Individual Zones Settings

For each zone, you can define the keyboard and velocity range, and enable or disable Zone-specific settings. Each zone is listed horizontally, with each zone's parameters listed vertically.

	ZONE 1	ZONE 2	ZONE 3	ZONE 4
ZONE CHANNEL	1	2	3	4
LOW NOTE	0	42	72	72
HIGH NOTE	40	70	127	127
LOW VELOCITY	1	1	1	62
HIGH VELOCITY	127	127	61	127
SEMITONE TRANSPOSE	+2	-2	0	0
SEND PITCH WHEEL ON ZONE CHANNEL	●	●	●	●
SEND MOD WHEEL ON ZONE CHANNEL	○	○	○	○
SEND AFTERTOUCH ON ZONE CHANNEL	●	●	●	●
SEND SUSTAIN ON ZONE CHANNEL	○	○	○	○
NOTE LATCH MODE ENABLE	●	●	●	●
POST ZONE OCTAVE TRANSPOSE	○	○	○	○

Zone Enable/Disable

Enables or disables the Zone. When this button is highlighted `ZONE 4` the Zone is Enabled. Not highlighted `ZONE 4` means the Zone is disabled.

Zone Channel

Sets the MIDI channel that each Zone's keys, mod wheel, pitch wheel, and pedal send data across. Enter a value between 1 and 16.

Low Note and High Note

Sets the lowest and highest notes for each Zone. Enter a value between 0 and 127. The Low Note must be a value equal to or less than the value of the high note. The high note must be a value equal to or greater than the value of the low note.

Low Velocity and High Velocity

Sets the lowest and highest velocities for each Zone. Enter a value between 1 and 127. The Low velocity must be a value equal to or less than the value of the high note. The high velocity must be a value equal to or greater than the value of the low note.

Semitone Transpose

Transposes the Zone in semitones.

Send Pitch Wheel on Zone Channel

Enables or disables the Pitch Wheel for each Zone. With this enabled, the pitch wheel sends messages across the Zone's assigned MIDI channel.

Send Mod Wheel on Zone Channel

Enables or disables the Mod Wheel for each zone. With this enabled, the mod wheel sends messages across the Zone's assigned MIDI channel.

Send Aftertouch on Zone Channel

Enables or disables Aftertouch for each zone. For more information, on aftertouch, see page 37.

Send Sustain on Zone Channel

Enables or disables the Sustain Pedal for each Zone. With this enabled, the sustain pedal sends messages across the Zone's assigned MIDI channel. For more information, see page 40.

Note Latch Mode Enable

Enables or disables Latch Mode for each zone. This function works in conjunction with the **Latch** button on your Xboard. See "Latch Mode, Zones Enabled" on page 30.

Post Zone Octave Transpose

Enables or disables Octave transpose for each Zone. This setting is relevant only when **Octave Transpose Mode** (page 56) is enabled.

So, if you disable Post Zone Octave transpose for Zone 1, when you press the **Octave Transpose** button on your Xboard, Zone 1 does not transpose.
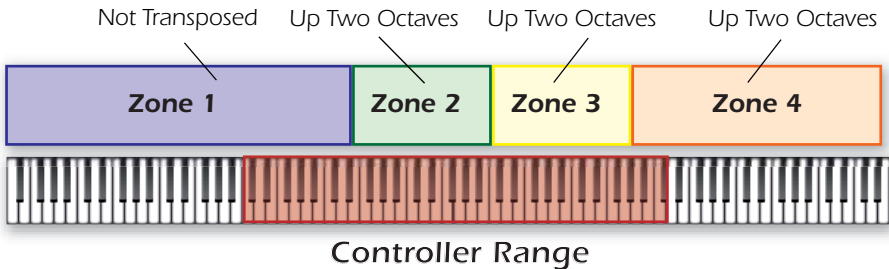
A case in which you might want to use this feature is with a drawbar organ synthesizer. You can map Zone 1 to the organ's pedal controllers, and still be able to access those notes, even when transposing zones 2, 3, and 4.

Menu Items

Preferences

To access the Preferences menu on a Mac, select **Preferences** from the **E-MU Xboard** menu. On a PC, select **Preferences** from the **File** menu.

Backups

These options allow you to choose the location where automatic backups will be stored and how many backup files will be retained 1-4. Backup files are created whenever the Xboard Control application uploads all settings from a connected Xboard (e.g., at application startup, when the **Refresh** function is used, when the **Device Select** function is used, or when you select **Save Revert**).

Backups Folder	Backup Patches and Banks will be stored in the selected folder.
Num Backups Retained	Selects how many backup files will be retained (1, 2, 3 or 4).

Device

Auto-Store Patches	**Ask Always** - Whenever you change to a different patch without first storing the modified patch a popup dialog box appears asking if you want to store a modified patch. **Auto -** A modified patch is automatically stored without asking when you change patches.
Startup Device	**Default** or **Last** - This option selects which keyboard will be selected on startup when you have more than one Xboard connected to USB. You can choose the default Xboard (as selected in the Device menu), or you can choose the last Xboard you selected

Loading and Saving

Loading and Saving operations are located in the **File** menu.

Load From File

This option allows you to Load saved **Bank Files**, **Patch Files** or **Both** into the Xboard Control.

IMPORTANT: Note that banks or patches which are loaded into Xboard Control from disk files will be immediately downloaded to the Xboard and will overwrite patches which are stored there.

▶ **To Load a Bank or Patch:**

1. First select the desired destination patch location in the Bank view.
2. Select **Load from File** from the File menu. The Open dialog box appears.
3. **Locate the folder** containing your Banks and Patches. (The default folder is set in the Preferences menu.)
4. **Select the desired Bank or Patch file.**
5. Press **Open** to load the file or **Cancel** to cancel the operation.

Save Patch

This option allows you to Save Xboard **Patches** to your hard disk.

▶ **To Save a Patch to Disk:**

1. First select that patch in the Bank View.
2. Select **Save Patch** from the File menu. The Save As dialog box appears.
3. Locate the folder where the Patch will be saved. (The default folder is set in the Preferences menu.)
4. Select **Patch** files as the type.
5. Click **Save** to save the Patch or **Cancel** to cancel the operation.

▶ **To Save a Bank to Disk:**

1. Select **Save Bank** from the File menu. The Save As dialog box appears.
2. Locate the folder where the Bank will be saved. (The default folder is set in the Preferences menu.)
3. Press **Save** to save the Bank or **Cancel** to cancel the operation.

Save Revert

Saves a backup file manually. See .

Store
This menu option stores the current Patch into the Xboard's non-volatile memory.
This function duplicates the **Store** button on the Xboard Control Patch Editor
screen.

Revert
The Xboard Control automatically backs up the contents of the Xboard whenever
you open the editor. This is so you can undo any changes you make during an
editing session if you so desire. See "Backups" on page 60.

Revert allows you to select one of the auto-backups so that you can "go back" to a
previous state of the Xboard.

The Revert dialog box is shown below. The date and time of the auto-backups are
recorded. Backup number one is the oldest backup.The number of automatic
backups can be selected in the Preferences menu. See page 60.

IMPORTANT: The Revert function is a "total undo" – it will not only undo edits to
the active patch, but will also undo all changes to stored patches in the Xboard
which have been made since the start of the editing session. Before using the
Revert function, make sure that this is what you want to do!
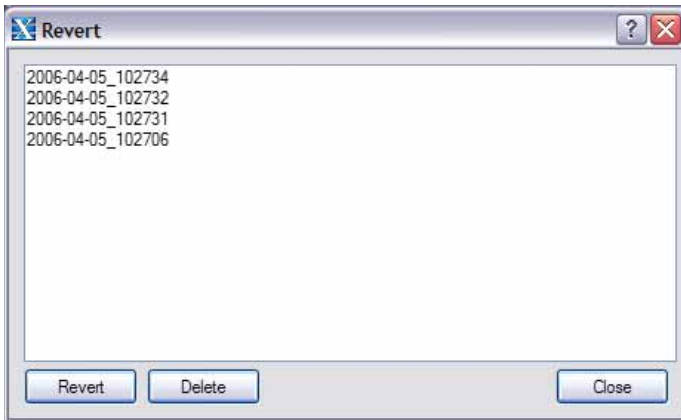
Edit Menu

Restore Pitch Wheel
The Pitch Wheel controller on the Patch Editor can be reprogrammed to operate as a standard MIDI real-time controller. This option restores the Pitch Wheel controller to its normal function as a synthesizer pitch wheel.

View Menu

Editor
This option allows you to either show or hide the patch editor section of the Xboard Control software. If you're just moving banks and patches around, and not editing patch settings, you can use this option to shrink the size of the application window.

Refresh
Selecting this option updates the Xboard Control display with the current state of the Xboard, including the active patch and non-volatile memory contents (stored patches).

Refresh should be performed any time you have changed the Controls on the Xboard and want the Xboard Control Editor to show these changes. For example, if you adjust the controller knobs on the Xboard, the display will not reflect the current state of the knobs until you select Refresh.

Device Menu

Select...
This option selects the current Xboard in the event that you have more than one Xboard connected to your computer.

Help Menu
The Help menu calls the .pdf version of this operation manual.

APPENDIX

MIDI Background

MIDI Channels & Continuous Controllers

MIDI continuous controllers may seem confusing at first, but they are really very simple once you understand them. You probably already know that there are 16 MIDI channels per MIDI cable. Information on a MIDI channel will only be received by an instrument set to receive that channel. MIDI channels are usually associated with different sounds. In this way, up to 16 sounds per MIDI cable can be separately controlled.

Each MIDI channels uses three basic types of messages; note on/off, preset changes, and continuous controller messages. When you play the keyboard, the Xboard transmits information about which notes were played and how hard.

The Xboard can also send *continuous controller* information from its 16 knobs, pitch and mod. wheels as well as aftertouch from the keyboard *(key pressure applied after the notes have been pressed)*. These controls are used to add more expression or control.

The controller knobs send out information on separate continuous controller numbers. There is a set of 128 continuous controller numbers (0-127) for each MIDI channel. Some continuous controllers, such as modulation wheel, volume, and pan have standardized numbers. For example, volume is usually sent on continuous controller #7.

Normally, the Xboard controller knobs and wheels transmit on a single MIDI channel, but each of the 16 knobs and wheels can be programmed to transmit on a different MIDI channel if you so desire. See for more information.

MIDI Channel 1	MIDI Channel 2	MIDI Channel 3	MIDI Channel 16
Note On/Off	Note On/Off	Note On/Off	Note On/Off
Program Change	Program Change	Program Change	Program Change
Continuous Controllers	Continuous Controllers	Continuous Controllers	Continuous Controllers
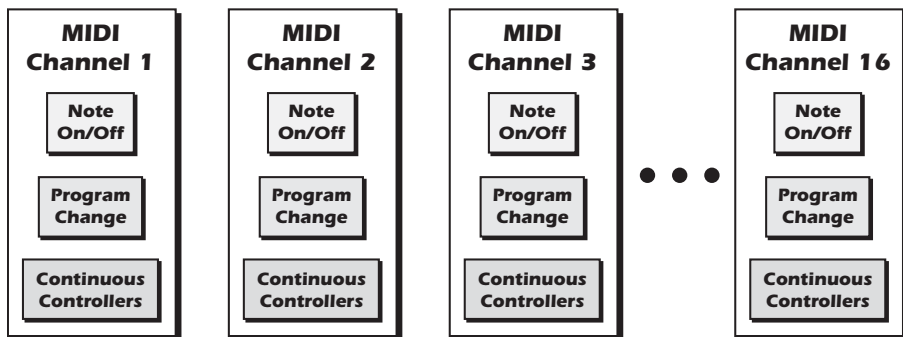
MIDI Program Change Commands

The Xboard has the ability to transmit a different MIDI Program Change command on each of the 16 MIDI channels. This feature can only be programmed using the Xboard Control software.

MIDI Bank Select Commands

The Xboard also transmits MIDI bank select commands using MIDI continuous controller numbers. Continuous Controller (CC) 0 is the MSB (most significant byte) and CC 32 is the LSB (least significant byte). Normally you send both the MSB and LSB controllers to implement a bank change.
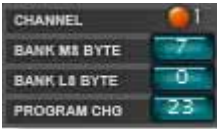
The selected bank remains selected until you change it (either via MIDI or by changing the bank from the display). Standard MIDI Program Change commands select from 128 presets within the selected bank.

Footpedal Wiring

The potentiometer value can be anywhere from 10K ohms to 250K ohms in value. Pedals with these specifications are available at any music dealer.

Appendix
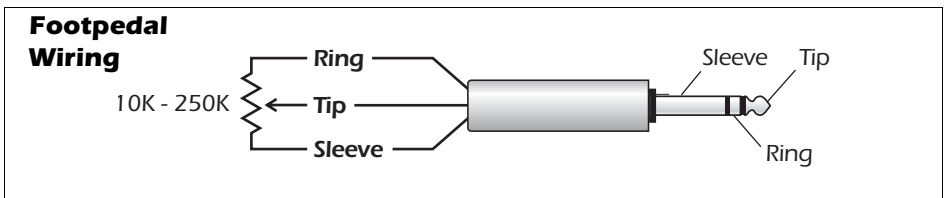
MIDI Implementation Chart

MIDI Information	Transmitted	Recognized	Remarks
MIDI Channels	1-16	No	16 MIDI Channels
Note Numbers	0-127	No	
Program Change	0-127	No	
Bank Select Response?	Yes	No	MSB + LSB

Modes: Omni (Mode 1)
  Mono (Mode 2)
  Poly (Mode 3)
  Mode 4 (Y/N)
  Multi (Mode 5)
	No
	No
	No
	No
	No
		No
		No
		No
		No
		No	

Note On Velocity	Yes	No	
Note Off Velocity	No	No	
Channel Aftertouch	Yes	No	
Poly (Key) Aftertouch	No	No	
Pitch Bend	Yes	No	
Active Sensing	No	No	
System Reset	No	No	
Tune Request	No	No	
System Exclusive Sample Dump Standard File Dump MIDI Tuning Master Volume Master Balance Notation Information Turn GM1 System On Turn GM2 System On Turn GM1 System Off Other (See Remarks)	No No No No Yes No No No No No No	No No No No No No No No No No No	
NRPNs	Yes	No	
RPN 00 (Pitch Bend Sensi.) RPN 01 (Chan. Fine Tune) RPN 02 (Chan Coar. Tune) RPN 03 (Tuning Prog Sel.) RPN 04 (Tuning Bank Sel.) RPN 05 (Mod Depth Rang)	No No No No No No	No No No No No No	
MIDI Timing & Sync	No	No	
MIDI Clock	No	No	
Song Position Pointer	No	No	
Song Select	No	No	
Start Continue Stop	No No No	No No No	
MIDI Time Code	No	No	
MIDI Machine Control	No	No	
MIDI Show Control	No	No	
General MIDI Compat? Is GM default mode?	No No	No No	
DLS compatible? Import DLS Files? Export DLS Files?	No No No	No No No	

MIDI Implementation Chart (part 2 - Controllers)

Control #	Function	Transmitted	Recognized	Remarks
0	Bank Select MSB	Yes	No	See Note *
1	Mod Wheel MSB	Yes	No	*
2	Breath Cntl MSB	No	No	*
3		No		*
4	Foot Cntl MSB	No	No	*
5	Portamento MSB	No	No	*
6	Data Entry MSB	No	No	*
7	Chan Volume MSB	No	No	*
8	Balance MSB	No	No	*
9				*
10	Pan MSB	No	No	*
11	Expression MSB	No	No	*
12	Effect Cntl 1 MSB	No	No	*
13	Effect Cntl 2 MSB	No	No	*
14 - 15	UNDEFINED	- - -	- - -	*
16	GenPur Ctrl 1 MSB	No	No	*
17	GenPur Ctrl 2 MSB	No	No	*
18	GenPur Ctrl 3 MSB	No	No	*
19	GenPur Ctrl 4 MSB	No	No	*
20 - 31	UNDEFINED	- - -	- - -	*
32	Bank Select LSB	Yes	No	*
33	Mod Wheel LSB	Yes	No	*
34	Breath Cntl LSB	No	No	*
35				*
36	Foot Cntrlr LSB	No	No	*
37	Portamento LSB	No	No	*
38	Data Entry LSB	No	No	*
39	Chan Volume LSB	No	No	*
40	Balance LSB	No	No	*
41				*
42	Pan LSB	No	No	*
43	Expression LSB	No	No	*
44	Effect Cntl 1 LSB	No	No	*
45	Effect Cntl 2 LSB	No	No	*
46				*
47				*
48	Gen Pur Ctrl 1 LSB	No	No	*

MIDI Implementation Chart (part 2 - Controllers)

Control #	Function	Transmitted	Recognized	Remarks
49	Gen Pur Ctrl 2 LSB	No	No	*
50	Gen Pur Ctrl 3 LSB	No	No	*
51	Gen Pur Ctrl 4 LSB	No	No	*
52				*
53				*
54				*
55				*
56				*
57				*
58				*
59				*
60				*
61				*
62				*
63				*
64	Sustain Pedal	Yes	No	*
65	Portamento on/off	No	No	*
66	Sostenuto	No	No	*
67	Soft Pedal	No	No	*
68	Legato Footswitch	No	No	*
69	Hold 2	No	No	*
70	Variation	No	No	*
71	Timbre/Har Inten	No	No	*
72	Release Time	No	No	*
73	Attack Time	No	No	*
74	Brightness	No	No	*
75	Sound Cntrlr 6	No	No	*
76	Sound Cntrlr 7	No	No	*
77	Sound Cntrlr 8	No	No	*
78	Sound Cntrlr 9	No	No	*
79	Sound Cntrlr 10	No	No	*
80	Gen Purp Cntrlr 5	No	No	*
81	Gen Purp Cntrlr 6	No	No	*
82	Gen Pur Ctrlr 7	No	No	*
83	Gen Pur Ctrlr 8	No	No	*
84	Portamento Cntrl	No	No	*
85 - 90	Undefined	- - -	- - -	*

MIDI Implementation Chart (part 2 - Controllers)

Control #	Function	Transmitted	Recognized	Remarks
91	Effects 1 Depth	No	No	*
92	Effects 2 Depth	No	No	*
93	Effects 3 Depth	No	No	*
94	Effects 4 Depth	No	No	*
95	Effects 5 Depth	No	No	*
96	Data Increment	No	No	
97	Data Decrement	No	No	
98	NRPN (LSB)	No	No	
99	NRPN (MSB)	No	No	
100	RPN (LSB)	No	No	
101	RPN (MSB)	No	No	
102 - 119	UNDEFINED			
120	All Sound Off	Yes	No	
121	Reset All Controllers	No	No	
122	Local Cntrl on/off	No	No	
123	All Notes Off	Yes	No	
124	Omni Mode Off	No	No	
125	Omni Mode On	No	No	
126	Poly Mode Off	No	No	
127	Poly Mode On	No	No	

NOTES: ***** The Xboard can transmit ANY continuous controller number from 1 to 127. A "No" response simply indicates that the controller is not transmitted or received by default.

Appendix

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